

 ICAS-STYLE PREPARATION SERIES

Paper D — Standard 6 Student Workbook

Original ICAS-style practice questions with full worked answers — to help students prepare with confidence.

 English · 22 sample Q

 Writing · 2 tasks

 Science · 10 sample Q

 Maths · 12 sample Q

 Digital Tech · 8 Q

STUDENT NAME	SCHOOL	DATE

TOTAL QUESTIONS	ANSWERS
52 original ICAS-style sample questions + 2 writing tasks	Full worked explanations at back

BEFORE YOU BEGIN

How to Use This Workbook

Every question in this workbook is an original ICAS-style practice question carefully written to match the format, text types, difficulty and question style of real ICAS Paper D assessments for Standard 6 students.

★ **MOST IMPORTANT RULE — NEVER LEAVE A QUESTION BLANK.** ICAS awards one mark for each correct answer and does not deduct marks for wrong answers. Always answer every question — even a guess has a chance of scoring.

Your Test at a Glance — Paper D / Standard 6

SUBJECT	QUESTIONS	TIME	PACE	FORMAT
📖 English	50 questions	50 min	~1 min per Q	Passage-based MCQ
✍ Writing	1 task	35 min	5 plan · 25 write · 5 edit	Extended response
🔬 Science	40 questions	55 min	under 90 sec per Q	MCQ with visuals
📐 Mathematics	40 questions	60 min	under 90 sec per Q	MCQ · No calculator
💻 Digital Technologies	35 questions	35 min	~1 min per Q	MCQ · Computer-based

🎯 WHAT'S NEW AT PAPER D

English: Questions now ask you to infer the writer's tone, identify themes, evaluate humour and explain specific structural choices.

Science: Reasoning from food webs, classifying physical vs chemical change, reading electrical circuits and interpreting multi-variable data.

Maths: Long division with remainders, fractions and mixed numerals, 3D nets, probability, 24-hour time, areas and angles with parallel lines.

Digital Technologies: Find & Replace options, spreadsheet fill-down, URL components, flowchart tracing, email CC/BCC, database filters, animation triggers and pseudocode loops.



Every question is based on a passage. Text types include informational articles, poems, narrative extracts and cloze passages. At Paper D, questions move beyond comprehension into analysis: writer's tone, theme, character development and structural choices.

ENGLISH STRATEGY FOR PAPER D

Writer's tone — ask: how does the writer feel about this topic? **Infer theme** — the big idea under the story. **Vocabulary with multiple meanings** — always use context, never the first meaning that comes to mind.

TEXT 1 OF 4 — INFORMATIONAL ARTICLE

The Upside of Failure

Original text for ICAS preparation purposes

Most of us spend considerable effort avoiding failure. Examinations are dreaded; wrong answers are hidden; mistakes are corrected as quickly and quietly as possible. Modern culture has become so uncomfortable with the idea of getting something wrong that some schools have stopped using red pen to mark errors — afraid, apparently, that it might discourage students. But a growing body of research suggests we may have this exactly backwards.

Several studies now confirm what many effective teachers have long suspected: making mistakes is not merely an unfortunate side effect of learning — it *is* learning. When we get something wrong, our brains produce a surge of electrical activity, particularly in regions associated with attention and problem-solving. This response is measurably more intense than the response produced by getting something right.

One of the most striking experiments in this area was conducted at Michigan State University. Researchers tracked the brain activity of participants solving difficult puzzles. Those who believed their intelligence was fixed showed little neural response to their errors — they noted the mistake and moved on. Those who believed their abilities could grow showed a dramatically different pattern: their brains lit up, re-examining the error, looking for what went wrong.

This difference in mindset explains a great deal. Students who fear failure avoid challenging tasks, because challenge increases the risk of getting something wrong. In doing so, they protect their ego but starve their brain of the very experiences that would make them more capable. They choose comfort over growth.

None of this means that failure is automatically beneficial. Repeated failure without feedback, support, or adjustment teaches very little. A mistake that is simply repeated is not a learning experience — it is merely a habit.

The best schools and the best teachers have always understood this, even before the neuroscience confirmed it. A classroom where students are afraid to be wrong is a classroom where very little genuine thinking is taking place. A classroom where mistakes are expected, examined, and even welcomed is the kind of place where real learning happens.

Questions 1–7 are about The Upside of Failure

TEXT COMPREHENSION — RESTATE THE WRITER'S OPINION

1 Which best states the writer's main opinion in this article?

- ☐ A Failure is a necessary and productive part of learning, provided it is noticed and learned from.
- ☐ B Schools should stop using red pens because they discourage students.
- ☐ C The Michigan State experiment proved that intelligence is not fixed.
- ☐ D Students who believe they can improve always achieve better results.

TEXT COMPREHENSION — MAIN PURPOSE OF A PARAGRAPH

2 What is the main purpose of the third paragraph (beginning 'One of the most striking experiments')?

- ☐ A To introduce the idea that failure is beneficial for the first time.
- ☐ B To argue that Michigan State University is the most reliable research institution.
- ☐ C To suggest that difficult puzzles are a better way to learn than studying.
- ☐ D To provide specific scientific evidence that supports the article's central claim.

TEXT COMPREHENSION — EXPLAIN CAUSE AND EFFECT

3 According to the article, what is the effect of students fearing failure?

- ☐ A They produce more intense brain activity when they make mistakes.
- ☐ B They avoid challenging tasks, which prevents their brains developing the skills they need.
- ☐ C They become better at correcting errors quickly.
- ☐ D They do not experience the usual neural response to getting something wrong.

WRITER'S CRAFT — INFER WRITER'S TONE

4 Which best describes the writer's tone in this article?

- A Thoughtful and persuasive, building a logical argument
- B Angry and critical of modern education
- C Uncertain and cautious about the evidence
- D Humorous and light-hearted throughout

WRITER'S CRAFT — EFFECT OF FIGURATIVE LANGUAGE

5 In the fourth paragraph, the writer says students who avoid challenge 'starve their brain.' What effect does this figurative language create?

- A It creates humour by comparing the brain to a person who refuses to eat.
- B It suggests that students who fear failure will eventually become physically unwell.
- C It signals that the writer is about to change their argument.
- D It vividly conveys that avoiding challenge deprives the brain of what it needs to grow.

WRITER'S CRAFT — PURPOSE OF INCLUDING A REFERENCE

6 Why does the writer mention schools 'stopping using red pen to mark errors' at the start of the article?

- A To prove that all modern schools have low academic standards.
- B To suggest that red pens should be banned from all classrooms.
- C To give a concrete, recognisable example of how far discomfort with failure has gone — establishing the problem the article will argue against.
- D To show the writer has personal experience working in schools.

7

The word *striking* in the third paragraph has more than one possible meaning. As used here, it means

A physically hitting something

B refusing to work in protest

C notably impressive or remarkable

D matching two clocks together

TEXT 2 OF 4 — POEM

First Trophy

Original poem for ICAS preparation purposes

My sister's name was called
and the gymnasium held its breath.

She walked up slowly —
I could see she was counting her steps,
the way she does when she is nervous,
the way she used to count the stairs
at our old house,
before she stopped being afraid of the dark.

The trophy was almost as tall as she was.
She laughed when she took it —
a small, surprised sound.

I clapped until my palms ached.
And some other feeling,
smaller and less honest,
I pressed down like a crease in paper
and hoped no one could see.

She looked for me first
across the crowded rows.
When she found my face,
I made sure mine was right.

Later, she said, 'You always believe in me.'
And I said nothing,
because some of what she said was true.

Questions 8–13 are about First Trophy

TEXT COMPREHENSION — INFER THEME

8 What is the main theme of this poem?

- A The experience of holding mixed feelings — pride and jealousy at the same time — and choosing to be generous
- B The rivalry that exists between siblings at school competitions
- C The unfairness of school award ceremonies
- D The importance of practising in order to win competitions

WRITER'S CRAFT — PURPOSE OF PERSONIFICATION

9 'The gymnasium held its breath.' What effect does this personification create?

- A It suggests the gymnasium is a living, breathing creature.
- B It shows that the gymnasium was stuffy and uncomfortable.
- C It signals that the speaker does not want her sister to win.
- D It captures the tense, expectant silence of everyone in the room in a vivid, physical way.

TEXT COMPREHENSION — INFER CHARACTER'S FEELINGS

10 'I pressed down like a crease in paper / and hoped no one could see.' What feeling is the speaker pressing down?

- A Pride in her sister
- B Embarrassment at the ceremony
- C A feeling of envy or jealousy
- D Sadness that the competition is over

TEXT COMPREHENSION — INFER REASON FOR DECISION

11 Why does the speaker say nothing when her sister says 'You always believe in me'?

- ☐ A Because the statement is partly true and partly not — to agree fully would be dishonest.
- ☐ B Because the speaker knows the statement is entirely false.
- ☐ C Because the speaker is angry about the competition result.
- ☐ D Because the speaker does not want to embarrass her sister.

WRITER'S CRAFT — HOW A FEELING IS DEVELOPED

12 The detail about the sister 'counting her steps' and the reference to 'counting the stairs at our old house' is included to

- ☐ A show that the sister is not very confident and does not deserve to win.
- ☐ B suggest that the sister has an anxiety problem that needs to be addressed.
- ☐ C show that this is the first time the sister has ever been brave.
- ☐ D remind the reader that the speaker knows their sister deeply and intimately, making the mixed feelings more meaningful.

SYNTAX — PRONOUN REFERENT

13 In 'When she found my face, / I made sure mine was right,' the word 'mine' refers to

- | | |
|---|--|
| ☐ A The trophy her sister was holding | ☐ B The speaker's seat in the audience |
| ☐ C The speaker's facial expression | ☐ D Her sister's opinion |

The Art of Making Gravy

Original fiction extract for ICAS preparation purposes

Marcus had watched his mother make gravy exactly forty-seven times. He knew this because, since the age of six, he had kept a small notebook in which he recorded things he intended to master. Forty-seven observations ought to be sufficient.

'It's all about confidence,' his mother always said, stirring.

He now stood at the stove, holding the same wooden spoon, staring into a pan that contained what he could only describe as a brown, aggressively bubbling substance that bore no resemblance to anything edible. He added more water. This was, he would later understand, a catastrophic decision.

His sister Priya appeared in the doorway, took one look at the pan, and left without saying anything. This, Marcus reflected, was worse than if she had laughed.

The gravy was now the consistency of soup. He tried adding flour. It became the consistency of cement. He tried adding more water. It became soup again. He had created, he realised, a pendulum of failure.

'You could just... buy a packet?' Priya called from the living room.

'I,' said Marcus, with the air of someone who had not yet admitted that everything was going wrong, 'am in complete control of the situation.'

The smoke alarm disagreed.

When their parents arrived home two hours later, Marcus met them at the door. He was wearing an apron covered in what appeared to be geological strata of cooking attempts, and he was holding a jar of purchased gravy in one hand and a piece of toast in the other.

'We had toast for dinner,' said Priya, appearing behind him. 'It was excellent.'

Questions 14–20 are about The Art of Making Gravy

VOCABULARY — WORD WITH SEVERAL MEANINGS

14 The word *catastrophic* in the third paragraph most likely means

A deliberate

B disastrously harmful

C brave

D dramatic but harmless

TEXT COMPREHENSION — INFER CHARACTER'S MOTIVATION

15 When Marcus says 'I am in complete control of the situation,' the writer suggests he

A is aware of the failure but too proud to admit it, especially to his sister.

B genuinely believes the gravy is going well.

C is asking his sister for help without directly saying so.

D has solved the problem and the gravy is now improving.

WRITER'S CRAFT — EVALUATE HUMOROUS ASPECTS

16 'He had created, he realised, a pendulum of failure.' This phrase is humorous because

A pendulums are associated with clocks, not cooking, so the comparison is absurd and unexpected.

B the word 'pendulum' sounds like a scientific term which makes the gravy seem impressive.

C Marcus uses the phrase to explain the situation clearly to his sister.

D a pendulum swinging back and forth is the same motion as stirring gravy.

WRITER'S CRAFT — HOW A CHARACTER IS DEVELOPED

17 How does the writer develop the character of Priya in this extract?

- ☐ A Through long descriptions of her thoughts and feelings.
- ☐ B By describing how she helps Marcus fix the gravy step by step.
- ☐ C Through short, understated reactions and one-line comments that show she is quietly amused but not surprised.
- ☐ D By explaining her relationship with Marcus at the start of the extract.

TEXT COMPREHENSION — INFER THEME

18 The detail of Marcus's notebook helps establish which theme?

- ☐ A That hard work and preparation always lead to success.
- ☐ B That Marcus is unusually organised for his age.
- ☐ C That notebook-keeping is a useful study skill.
- ☐ D That overconfidence based on observation rather than actual practice leads to failure.

WRITER'S CRAFT — EFFECT OF A ONE-SENTENCE PARAGRAPH

19 'The smoke alarm disagreed.' forms a paragraph by itself. Why is this effective?

- ☐ A The contrast between Marcus's confident claim and this immediate blunt contradiction creates a sharp comic punch.
- ☐ B It transitions into the next part of the story where Marcus explains himself.
- ☐ C It is too short to be a real paragraph and is probably a printing error.
- ☐ D It suggests the smoke alarm is the most important character in the story.

SYNTAX — GRAMMATICAL RELATIONSHIP OF A CONNECTIVE

20 'Priya appeared in the doorway, took one look at the pan, and left without saying anything.' The word 'and' joins

- A Two contrasting ideas that oppose each other.
- B Three actions that happen in quick sequence as part of a single unbroken moment.
- C A cause and its direct result.
- D Two characters' different reactions to the same event.

TEXT 4 OF 4 — CLOZE PASSAGE

The Return of the Wolf

Original cloze passage for ICAS preparation purposes

When grey wolves were reintroduced to Yellowstone National Park in 1995, scientists described what followed as a 'trophic cascade' — a chain reaction in which the return of a single predator altered an entire landscape. The wolves reduced elk numbers; **(21)**, they changed the behaviour of elk entirely. Elk no longer grazed on exposed riverbanks, which were now dangerous places to linger. Without constant grazing, vegetation recovered: willows and aspens grew taller, rivers slowed, and songbirds returned. This was not simply a story about wolves **(22)** it was a story about the invisible connections that bind all living things in an ecosystem.

SYNTAX — SELECT THE CORRECT CONNECTIVE

21 Choose the word or phrase that best completes blank (21).

- A however
- B more significantly
- C therefore
- D as a result

SYNTAX — SELECT THE CORRECT CONNECTIVE

22 Choose the word or phrase that best completes blank (22).

- A because
- B although
- C so
- D — rather



Writing

Paper D · 2 practice tasks · 35 min each

2

TASKS

35

MIN EACH

ICAS Writing gives you one task — Narrative or Persuasive. At Paper D level, markers look for sophisticated vocabulary, varied sentence structures and a clear sense of voice.

THE 5-25-5 RULE

5 min Plan · 25 min Write · 5 min Edit. Vary sentence length deliberately — a short sentence after several long ones creates emphasis.

Task W1 — Persuasive Writing

YOUR TASK

Write an opinion piece for your school magazine arguing whether competitive sport should or should not be compulsory for all students. Clearly state your position, support it with at least three reasons, and address the opposing view.

 35 minutes total.

5 MIN
PLAN

Position (circle): COMPULSORY / NOT COMPULSORY

3 reasons:

Counter-argument:

YOUR RESPONSE

Task W2 — Narrative Writing

YOUR TASK

Write a story in which a character discovers something unexpected and must decide whether or not to share what they know. Establish a clear setting, develop the character's dilemma, and reach a satisfying conclusion.

🕒 35 minutes total.

5 MIN PLAN

Discovery: _____ **Where:** _____

Dilemma:

Ending:

YOUR RESPONSE



Science

Paper D · 10 sample questions · every question uses a visual

10

QUESTIONS

5

TOPICS

At Paper D you reason further — food webs, physical vs chemical change, electrical circuits and multi-variable data.

PAPER D SCIENCE STRATEGY

Physical vs chemical change: a new substance formed = chemical. **Food webs:** trace up and down the chain. **Circuits:** series = one path; removing one component breaks the circuit.

LIFE & LIVING — MULTI-STEP FOOD WEB PREDICTION

- 1 The diagram shows a grassland food web. A new predator is introduced that hunts only shrews. Which prediction is best supported?

GRASSLAND FOOD WEB



Arrows point from prey to predator. A new predator is introduced that hunts **only shrews**.

- A Frog numbers would decrease because shrews and frogs now compete more intensely.
- B Grasshopper numbers would increase, which over time could cause grass populations to decline.
- C Fox numbers would increase because the fox no longer needs to share its hunting range.
- D Rabbit numbers would decrease because they will compete with more grasshoppers for grass.

2

The table below describes five changes observed in a science lab. Which option correctly identifies two chemical changes?

CHANGES OBSERVED IN THE LAB

LABEL	OBSERVATION
P	A block of ice left on a bench slowly turns to liquid water
Q	A piece of wood is set alight and burns, producing ash and smoke
R	Table salt is stirred into warm water and disappears
S	A steel nail is left outside for two weeks and develops a reddish coating
T	A glass bottle is dropped and shatters into pieces

A P and R

B Q and S

C P and T

D R and T

3

A geologist studies a cliff face with four rock layers. The diagram shows the layers and the fossils found in each. Which order, from oldest to most recent, correctly sequences the organisms?

CLIFF FACE — SIDE VIEW

Layer 1 (top)	 Small reptile fossils
Layer 2	 Shell fossils
Layer 3	 Insect fossils
Layer 4 (bottom)	No fossils found

In undisturbed rock, the lowest layer is the oldest.

A Insects → Shell organisms → Small reptiles

B Small reptiles → Shell organisms → Insects

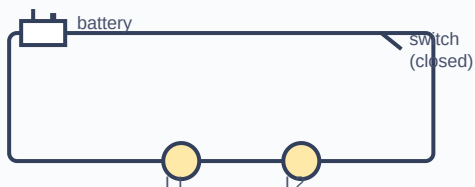
C No life (oldest) → Insects → Shell organisms → Small reptiles

D Small reptiles (oldest) → Shell organisms → Insects → No life

ENERGY & CHANGE — SERIES ELECTRICAL CIRCUIT

- 4 A series circuit has two identical bulbs L1 and L2, a battery and a closed switch. Both glow equally. If bulb L1 is removed from its socket, what happens to L2?

SERIES CIRCUIT



Two identical bulbs L1 and L2 glow equally. Bulb L1 is removed from its socket.

- A L2 glows more brightly — current through L2 increases.
- B L2 goes out — the circuit is broken and no current can flow.
- C L2 glows less brightly — it now has to do all the work.
- D L2 remains at the same brightness — the battery voltage is unchanged.

NATURAL & PROCESSED MATERIALS — FOOD COMPARISON TABLE

- 5 The table below compares the nutritional content of fresh and canned versions of three foods (per 100 g). Which statement is best supported by the data?

FRESH VS CANNED (PER 100 G)

FOOD	SODIUM FRESH	SODIUM CANNED	VIT C FRESH	VIT C CANNED	PROTEIN FRESH	PROTEIN CANNED
Tomatoes	5 mg	130 mg	14 mg	6 mg	—	—
Peas	3 mg	280 mg	40 mg	8 mg	—	—
Salmon	—	—	—	—	20 g	22 g

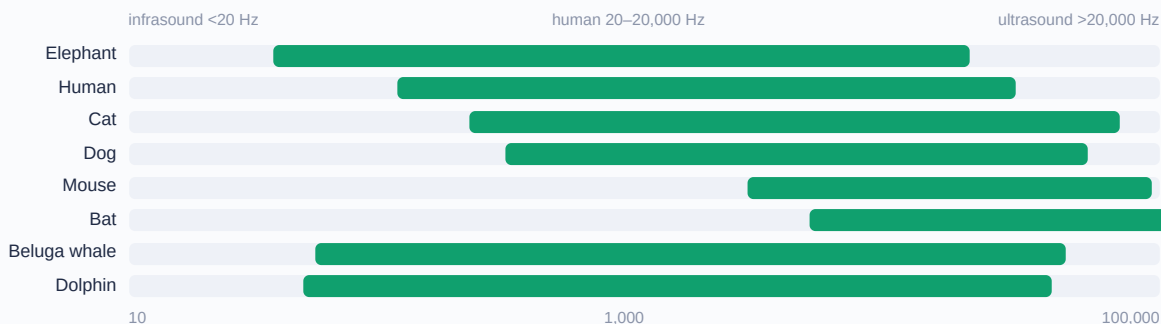
— = not measured for that food.

- A Canning always reduces protein content.
- B Processed foods consistently contain more sodium and less vitamin C than fresh equivalents.
- C Fresh foods contain no sodium at all.
- D Canned salmon is less nutritious than fresh salmon in every category.

ENERGY & CHANGE — ANIMAL HEARING FREQUENCY RANGES

- 6 The graph shows the hearing range of eight animals. Sounds below 20 Hz are infrasound; sounds above 20,000 Hz are ultrasound. How many of the animals can detect both infrasound and ultrasound?

HEARING FREQUENCY RANGES (HZ) — LOG SCALE



A 0

B 1

C 2

D 6

EARTH & BEYOND — SEASONAL TEMPERATURE VARIATION

- 7 Jamie recorded temperatures at the same location four times a day during one week in each season. Which season shows the greatest daily temperature variation?

AVERAGE TEMPERATURES BY SEASON (°C)

SEASON	6 AM	12 NOON	6 PM	MIDNIGHT	DAILY RANGE
Summer	24	36	30	25	12
Autumn	16	24	20	15	9
Winter	8	16	12	8	8
Spring	14	27	21	13	14

A Summer

B Autumn

C Winter

D Spring

8

The diagram shows a transverse wave. Which option (A–D) represents a wave that would sound louder than the original?

SOUND WAVES — WHICH IS LOUDER THAN THE ORIGINAL?

Original

Wave B — larger amp, same λ Wave D — same amp, shorter λ Wave A — same amp, longer λ Wave C — smaller amp, shorter λ ☐ A Diagram A☐ B Diagram B☐ C Diagram C☐ D Diagram D

9

Invertebrate species were counted at four river points before and after factory discharge began. Which conclusion is best supported by this data?

INVERTEBRATE SPECIES COUNT (BEFORE → AFTER DISCHARGE)

RIVER POINT	BEFORE	AFTER
Point A (2 km upstream)	22	21
Point B (at discharge)	20	7
Point C (1 km downstream)	21	9
Point D (5 km downstream)	22	19

☐ A The factory discharge has affected the entire river equally.☐ B The discharge has reduced biodiversity most severely near the discharge point, with some recovery further downstream.☐ C The data shows the river was already polluted before the factory began.☐ D The river will return to its original state within one year.

10

The diagram shows key organs of the digestive system. A patient has part of their small intestine surgically removed. What can they expect?

HUMAN DIGESTIVE SYSTEM — KEY FUNCTIONS

Stomach	Breaks food into smaller pieces using acid and churning
Small intestine	Completes digestion; absorbs nutrients into the bloodstream
Large intestine	Absorbs water from undigested food; forms solid waste

A patient has part of their **small intestine** surgically removed.

- A** They will be unable to absorb any water, leading to severe dehydration.
- B** They will have difficulty absorbing nutrients from their food, even if digestion still occurs.
- C** Their stomach and large intestine will take over and absorb the nutrients instead.
- D** They will be unable to break down fats, because bile can no longer enter the system.



New at Paper D: long division with remainders, fractions and mixed numerals, 3D nets, probability, 24-hour time, area and perimeter, and angle problems with parallel lines.

MATHS STRATEGY FOR PAPER D

Fractions: simplify first. **3D nets:** count faces by type. **Parallel lines:** corresponding angles equal; co-interior angles add to 180° . **24-hour time:** $14:30 = 2:30$ pm.

NUMBER — FRACTIONS ON A NUMBER LINE

- 1 The number line shows points P, Q, R and S. Which point is closest to $\frac{2}{3}$?

NUMBER LINE



$P \approx 0.3$, $Q \approx 0.7$, $R \approx 1.1$, $S \approx 1.4$ (each interval = 0.1).

A Point P

B Point Q

C Point R

D Point S

ARITHMETIC — LONG DIVISION WITH REMAINDER

- 2 437 students go on an excursion. Each bus holds 28 students. How many buses are needed, and how many students are on the last (not full) bus?

A 15 buses, with 5 students on the last bus

B 16 buses, with 17 students on the last bus

C 15 buses, with 17 students on the last bus

D 16 buses, with 9 students on the last bus

MEASURES — METRIC CONVERSION

3 Jessica ran 3.5 km Monday, 1850 m Wednesday, and 2 km 400 m Friday. What is her total distance in km?

A 5.85 km

B 7.75 km

C 6.35 km

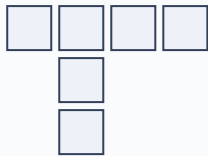
D 7.35 km

SPACE & GEOMETRY — 3D NETS

4 Which of the nets below, when folded, would make a triangular prism?

WHICH NET FOLDS INTO A TRIANGULAR PRISM?

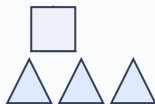
Net A



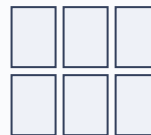
Net B



Net C



Net D



A Net A

B Net B

C Net C

D Net D

CHANCE & DATA — COUNTING ARRANGEMENTS

- 5** Deb, Abby and Carl sit in a row of 4 seats. Deb and Abby must sit next to each other. Carl sits in one of the remaining 2 seats. How many different arrangements are possible?

A 6

B 8

C 12

D 18

MEASUREMENT — AREA, PERIMETER AND FACTOR PAIRS

- 6** A rectangle has an area of 36 m^2 . Its length and width are whole numbers. Which of these could be its perimeter?

A 40 metres

B 37 metres

C 20 metres

D 16 metres

MEASUREMENT — 24-HOUR TIME

- 7 Aisha arrives at Central at 1:30 pm. Train 1 departs 07:45, Train 2 departs 13:20 (arrives 14:40), Train 3 departs 18:55 (arrives 20:15). She catches the next available train. How long is her journey?

A 1 hour 15 minutes

B 1 hour 20 minutes

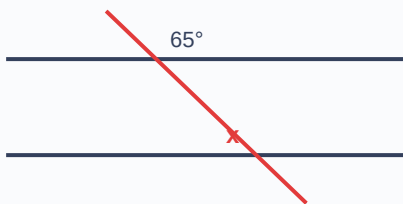
C 1 hour 25 minutes

D 1 hour 30 minutes

GEOMETRY — ANGLES WITH PARALLEL LINES

- 8 Two parallel lines are cut by a transversal. An angle of 65° is formed at the top intersection. Angle x is in the corresponding position at the bottom intersection. What is x ?

PARALLEL LINES CUT BY A TRANSVERSAL



The 65° angle and angle x are in corresponding positions.

A 65°

B 115°

C 125°

D 90°

ARITHMETIC — FRACTIONS WITH MIXED NUMERALS

- 9 A recipe needs $1\frac{3}{4}$ cups of flour per batch. Maya wants 4 batches. She has already measured $2\frac{1}{2}$ cups. How many more cups does she need?

A $4\frac{1}{2}$ cups

B 5 cups

C $4\frac{3}{4}$ cups

D 6 cups

CHANCE & DATA — COMPARE TWO DATA DISPLAYS

- 10 Class A spelling scores (out of 10): 5=2, 6=4, 7=8, 8=6, 9=3, 10=1. Class B is shown as a dot plot with most dots at 8 and 9 and four at 10. Which statement is best supported?

SPELLING SCORES (OUT OF 10)

SCORE	5	6	7	8	9	10
Class A (count)	2	4	8	6	3	1
Class B (count)	0	2	3	7	6	4

Class B is shown as a dot plot; both classes have 24 students.

- A Class A has more students than Class B.
- B Class B performed better overall, with more students scoring 8 or above.
- C Class A performed better overall, with most students scoring 7.
- D Both classes had the same most common score.

ALGEBRA & PATTERNS — EQUIVALENT NUMBER SENTENCES

11 Which number sentence has the same value as 24×25 ?

A $24 \times 20 + 24 \times 5$

B $24 \times 20 + 25 \times 4$

C $20 \times 25 + 4$

D $24 + 25 \times 24$

NUMBER — MULTI-STEP LOGIC PROBLEM

12 Alex, Ben and Cara each chose a different whole number. Their sum is 100. Alex's number is twice Ben's. Cara's number is 12 more than Ben's. What is Alex's number?

A 36

B 40

C 48

D 44



Digital Technologies

Practice · 8 questions · 10 minutes · every question uses a visual

8

QUESTIONS

10

MINUTES

In the real ICAS Digital Technologies paper, every question is based on a practical scenario shown in a screenshot, diagram, table or interface mockup. You are applying your knowledge — not just recalling facts.

DIGITAL TECHNOLOGIES STRATEGY FOR PAPER D

Spreadsheets: when a formula is filled down or right, column letters and row numbers shift — write it out step by step. **Flowcharts & Pseudocode:** trace values one step at a time. **Internet/Email:** think about what each field or button actually does. **Databases:** apply every filter condition separately before combining.

WORD PROCESSING — FIND & REPLACE / FORMATTING OPTIONS

- 1 Maya opens Find & Replace with Match case ticked. How many words in the document will change when she clicks Replace All?

FIND & REPLACE DIALOG

"The data collected each day proved the data was correct. However, the Data was entered incorrectly."

Find and Replace

Find what: data

Replace with: Data

☒ Match case | [Replace All]

A 1

B 2

C 3

D 0, because 'data' and 'Data' are the same word

2 Cell D2 contains $=B2*C2$. Lena fills the formula down to D4. What formula appears in cell D4?

STATIONERY SHOP SPREADSHEET

D2 $fx = B2*C2$

	A	B	C	D
1	Item	Unit Cost (\$)	Quantity	Total Cost (\$)
2	Pencils	0.50	20	$=B2*C2$
3	Rulers	1.20	15	▼
4	Erasers	0.30	30	▼

The formula in D2 is filled down to D4 using the fill handle (▼).

A $=B2*C2$ B $=B4*C4$ C $=B2*C4$ D $=D2+D3$

3 Omar must use only websites registered in Australia. In <https://www.science.edu.au/space/planets>, which labelled part confirms the site is registered in Australia?

BROWSER ADDRESS BAR

 [https\(A\)://www.science\(C\).edu\(B\).au\(D\)/space/planets](https://www.science.edu.au/space/planets)

Omar must use only websites registered in Australia.

A https — the security protocol

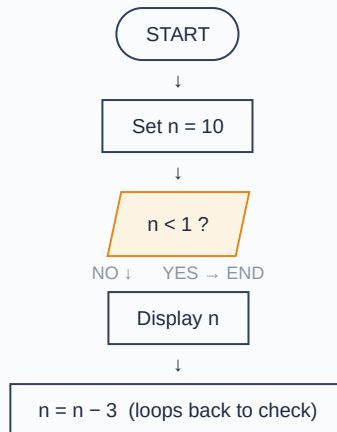
B edu — the organisation type

C science — the domain name

D au — the country code

- 4 Priya's flowchart checks $n < 1$ first, then displays n , then subtracts 3. Which set of numbers does it display?

FLOWCHART



The condition is checked FIRST, then n is displayed, then 3 is subtracted.

A 10, 7, 4, 1

B 10, 7, 4

C 10, 7, 4, 1, -2

D 7, 4, 1

- 5 The email has To: teacher, CC: classmate, BCC: parent. When the classmate receives it, which addresses can they see?

EMAIL COMPOSE WINDOW

To: mr.jones@school.edu.au

CC: classmate@school.edu.au

BCC: parent@email.com

Subject: Science Project — First Draft Update

CC = visible to all recipients. BCC = hidden from other recipients.

A Only Mr Jones's address — classmates cannot see any other fields.

B Mr Jones's address and the classmate's own address — but NOT the parent's address.

C Mr Jones's, the classmate's and the parent's addresses — all three are visible.

D No addresses — the classmate only sees the message body.

SPREADSHEETS & DATABASES — TWO-CONDITION FILTER

6

Sam applies two filters at once: Genre = Fiction AND Star Rating = ★★★★★★. Which book titles appear in the results?

LIBRARY BOOK DATABASE

ID	TITLE	GENRE	YEAR	RATING
1	Ocean Blue	Fiction	2017	★★★★★
2	Code Wizard	Non-fiction	2020	★★★★★★
3	Red Planet	Fiction	2021	★★★★
4	Desert Rose	Fiction	2019	★★★★★★
5	AI World	Non-fiction	2022	★★★★★
6	Star Child	Fiction	2023	★★★★★★

Active filters: Genre = Fiction AND Star Rating = ★★★★★★

- ☐ A Desert Rose and Star Child only
- ☐ B Ocean Blue, Desert Rose and Star Child
- ☐ C Code Wizard and AI World only
- ☐ D Red Planet, Desert Rose and Star Child

GRAPHICS & MULTIMEDIA — PRESENTATION ANIMATION TRIGGERS

7

Animations are set: Title (On Click), Image (After Previous), Bullet points (On Click). How many clicks does Nina need to show all three objects?

ANIMATION PANE

 ON CLICK

1. Title — Fade

 AFTER PREVIOUS

2. Image — Zoom

 ON CLICK

3. Bullet points — Fly In

On Click = waits for a mouse click. After Previous = plays automatically after the item above.

- ☐ A 1 click
- ☐ B 2 clicks
- ☐ C 3 clicks
- ☐ D 4 clicks

8

Trace this pseudocode. What value does the program output?

PSEUDOCODE

```
number ← 2
REPEAT
  number ← number × 2
UNTIL number > 20
OUTPUT number
```

← assignment · REPEAT...UNTIL runs the loop body first, then checks the condition.

☐ A 16☐ B 20☐ C 32☐ D 64



Answers & Worked Explanations

For every question, the correct answer is given first, then a worked explanation, then a note on why each other option is wrong. Read every explanation — even for questions you got right.



English — Answers

1

Writer's main opinion

✓ **Correct Answer: A — Failure is a productive part of learning**

The article argues this throughout, and the fifth paragraph adds the key nuance — failure only helps when it is noticed, examined and learned from. The other choices are a minor detail (red pens), too narrow (one experiment) or overstated ('always').

WHY THE OTHER OPTIONS ARE WRONG

- B** A minor example from the opening, not the article's main point.
- C** The experiment is supporting evidence, not the central claim.
- D** Too absolute — the article never says improvement 'always' guarantees results.

2

Purpose of the third paragraph

✓ **Correct Answer: D — Provides scientific evidence for the claim**

It introduces a named study with measurable results, moving the argument from a general claim to concrete evidence (claim → evidence).

WHY THE OTHER OPTIONS ARE WRONG

- A** The idea was already introduced earlier; this paragraph backs it up.
- B** The university is named only as the source, not praised as 'most reliable'.
- C** The puzzles are part of the experiment, not a study-method tip.

3

Effect of fearing failure

✓ **Correct Answer: B — They avoid challenge and stop their brains growing**

Paragraph four states that fear of failure makes students avoid challenge, which 'starves the brain' of the experiences that build capability.

WHY THE OTHER OPTIONS ARE WRONG

- A** That describes the growth mindset, not students who fear failure.
- C** The article never says fearful students correct errors better.
- D** The reduced neural response describes a fixed mindset, not this effect.

4 Writer's tone

✓ Correct Answer: A — Thoughtful and persuasive

The writer builds a careful, logical case: problem → claim → evidence → explanation → qualification → conclusion. Not angry, uncertain or humorous.

WHY THE OTHER OPTIONS ARE WRONG

- ☐ B The tone is measured and fair, never angry.
- ☐ C The writer states the case confidently, backed by evidence.
- ☐ D There is no sustained humour; the tone is serious.

5 Effect of 'starve their brain'

✓ Correct Answer: D — Shows the brain is deprived of what it needs

'Starve' is a metaphor — the brain needs challenge like a body needs food — making the deprivation vivid and physical rather than abstract.

WHY THE OTHER OPTIONS ARE WRONG

- ☐ A The metaphor is serious, not comic.
- ☐ B It is figurative, not a literal health warning.
- ☐ C It reinforces the argument; it does not signal a change.

6 Purpose of the red pen reference

✓ Correct Answer: C — A concrete example of discomfort with failure

The familiar example opens the article by showing concretely how far avoidance of failure has gone, setting up the problem the article then argues against.

WHY THE OTHER OPTIONS ARE WRONG

- ☐ A Overgeneralises — the writer makes no claim about all schools.
- ☐ B The example illustrates a point; it isn't a call to ban pens.
- ☐ D Nothing suggests the writer personally worked in schools.

7 'Striking' — word meaning

✓ Correct Answer: C — Notably impressive or remarkable

'One of the most striking experiments' means the experiment stands out — it is especially notable. Context decides between the multiple meanings.

WHY THE OTHER OPTIONS ARE WRONG

- ☐ A A literal meaning that doesn't fit 'a striking experiment'.
- ☐ B The wrong sense of 'strike' for this context.
- ☐ D Not a real meaning of the word.

8

Main theme of 'First Trophy'✓ **Correct Answer: A — Holding mixed feelings and choosing generosity**

The poem is about the emotional complexity of watching someone you love succeed while also feeling envious — and choosing generosity over honesty.

WHY THE OTHER OPTIONS ARE WRONG

- B** The poem shows love and restraint, not open rivalry.
- C** The ceremony is the setting, not the theme.
- D** Practice is never the poem's focus.

9

Effect of 'the gymnasium held its breath'✓ **Correct Answer: D — Captures the tense, expectant silence**

Personification gives the building the collective tension and silence of the audience — more evocative than simply 'the room was silent.'

WHY THE OTHER OPTIONS ARE WRONG

- A** Too literal — it is a figure of speech.
- B** Nothing about air quality is implied.
- C** The line conveys shared tension, not the speaker's wish.

10

What feeling is pressed down?✓ **Correct Answer: C — A feeling of envy or jealousy**

The feeling is described as 'less honest' — something to hide. In context it is envy, the wish that the speaker had won.

WHY THE OTHER OPTIONS ARE WRONG

- A** Pride is shown openly by clapping, not hidden.
- B** Nothing embarrassing happens to the speaker.
- D** The poem is about the moment itself, not its ending.

11

Why does the speaker say nothing?✓ **Correct Answer: A — The statement is only partly true**

The final line — 'because some of what she said was true' — is carefully worded. Not all, but some; to agree fully would be partly dishonest.

WHY THE OTHER OPTIONS ARE WRONG

- B** The last line says 'some of what she said was true'.
- C** There is no anger, only restraint.
- D** The silence is about honesty, not embarrassment.

12 Purpose of 'counting steps / counting stairs'

✓ Correct Answer: D — Shows how deeply the speaker knows her sister

This private, shared memory shows how close the two are; that intimacy makes the speaker's mixed feelings more meaningful and more painful.

WHY THE OTHER OPTIONS ARE WRONG

- A The detail builds intimacy, not judgement.
- B It is a tender memory, not a diagnosis.
- C It shows a long-known habit, not a first.

13 'Mine' pronoun referent

✓ Correct Answer: C — The speaker's facial expression

The sister looks for the speaker's face; the speaker makes sure their expression showed what it should — continuing the theme of performing a feeling.

WHY THE OTHER OPTIONS ARE WRONG

- A 'Mine' parallels 'my face', not the trophy.
- B Context is about expression, not seating.
- D 'Mine' refers back to the speaker's own face.

14 'Catastrophic' meaning

✓ Correct Answer: B — Disastrously harmful

Adding water made things dramatically worse. 'Deliberate' and 'brave' describe intention, not consequence; 'dramatic but harmless' contradicts the meaning.

WHY THE OTHER OPTIONS ARE WRONG

- A Describes intent, not the meaning of 'catastrophic'.
- C Unrelated to the word's meaning.
- D Contradicts 'catastrophic', which means very harmful.

15 Marcus's 'complete control' claim

✓ Correct Answer: A — Aware of failure but too proud to admit it

The narrator's phrase 'with the air of someone who had not yet admitted that everything was going wrong' tells us Marcus knows but won't say so.

WHY THE OTHER OPTIONS ARE WRONG

- B The narrator signals he knows it is failing.
- C He refuses help, insisting he is in control.
- D The smoke alarm shows the problem is not solved.

16 Why is 'a pendulum of failure' humorous?

✓ Correct Answer: A — An absurd, unexpected comparison

A pendulum — a precise, scientific instrument — has nothing to do with cooking. The gap between the grand language and the ridiculous situation creates the humour.

WHY THE OTHER OPTIONS ARE WRONG

- B The humour comes from absurdity, not from sounding impressive.
- C It is the narrator's thought, not spoken to Priya.
- D The joke is not about physical motion.

17 How Priya is developed

✓ Correct Answer: C — Through short, understated reactions

Priya appears three times — each time briefly and dryly. Her character emerges through minimal action and reaction rather than description.

WHY THE OTHER OPTIONS ARE WRONG

- A Priya is never described at length.
- B She does not help fix the gravy.
- D Her character emerges through action, not exposition.

18 What theme does the notebook establish?

✓ Correct Answer: D — Overconfidence from watching, not doing

Marcus built his confidence from watching 47 times rather than doing it himself — the theme is that watching is not the same as doing.

WHY THE OTHER OPTIONS ARE WRONG

- A The story shows the opposite.
- B A surface detail, not the theme.
- C The notebook represents false confidence, not good study.

19 Why is 'The smoke alarm disagreed' its own paragraph?

✓ Correct Answer: A — A sharp comic contradiction

Isolation creates emphasis. The four-word rebuttal, standing alone, lands a sharp comic punch right after Marcus's confident claim.

WHY THE OTHER OPTIONS ARE WRONG

- B It punctures the claim; it does not transition.
- C The isolation is deliberate, not an error.
- D It is a comic device, not a main character.

20

Grammatical role of 'and'✓ **Correct Answer: B — Three actions in quick sequence**

Three actions — appeared, took one look, left — are connected as a sequential list happening in one unbroken moment. Not contrast, cause-effect, or two characters.

WHY THE OTHER OPTIONS ARE WRONG

- A** The actions follow in sequence; they do not oppose.
- C** They are listed actions, not cause-and-effect.
- D** All three actions are Priya's, not two characters'.

21

Cloze blank (21)✓ **Correct Answer: B — more significantly**

The blank introduces an escalation — a consequence more important than reducing elk numbers. 'More significantly' signals this upgrade; 'therefore' implies a conclusion, 'however' a contrast, and 'as a result' misses the escalation.

WHY THE OTHER OPTIONS ARE WRONG

- A** Signals contrast, but this is an escalation.
- C** Implies a conclusion, not a more important point.
- D** Grammatical, but misses the 'more important' emphasis.

22

Cloze blank (22)✓ **Correct Answer: D — rather**

'Not simply about wolves ___ it was about connections' — the blank corrects the first description. A dash + 'rather' introduces that restatement; the others add a reason, contrast or consequence instead.

WHY THE OTHER OPTIONS ARE WRONG

- A** Adds a reason, but the clause corrects the previous one.
- B** Sets up contrast within one idea, not a restatement.
- C** Implies consequence, not correction.

Writing — Marking Framework & Self-assessment Guide

ICAS Writing asks for one extended response — either **narrative** or **persuasive**. It is a criterion-referenced assessment marked on a **common scale**: every student's writing is judged against the same criteria (up to twelve), grouped into three domains — **Genre**, **Textual Grammar** and **Syntax/Punctuation**. Scoring is cumulative — reaching a given score means every skill below it has also been met. Use the guide below to check your own writing for Tasks W1 and W2.

Task types you may be given. Persuasive: a review · an advertisement · a letter to a council · a formal argument · an opinion piece for a newspaper · a campaign manifesto. **Narrative:** the beginning of a narrative · the complication or event · a description of a setting · a description of a character · the conclusion.

GENRE

How you structure the text and the stylistic and vocabulary choices you make to achieve your purpose and engage the reader. The strongest writing integrates structure and language skilfully.

- **Persuasive:** clear opening position; modal verbs (should, must); reasons backed by examples; acknowledges and refutes the counter-view; a persuasive final line, not a summary.
- **Narrative:** opens in a specific moment; sensory detail; complication shown through the character; a structured beginning, middle and end that leaves the reader wanting more.

TEXTUAL GRAMMAR

Correct and purposeful use of tense; pronouns, conjunctions and connectives that help the reader follow the text; and a variety of correctly built sentence types, including complex sentences, used for effect.

- Tense is consistent and controlled (and shifted only on purpose).
- Pronouns refer clearly to the right noun.
- Conjunctions and connectives link ideas (however, therefore, meanwhile, because).
- Sentence variety — short, emphatic sentences mixed with longer complex ones.
- Each paragraph develops one clear idea.

SYNTAX / PUNCTUATION

Correct sentence grammar — including subject–verb agreement and correct use of prepositions, articles and plurals — and accurate punctuation.

- Subject and verb agree in every sentence.
- Correct prepositions, articles and plurals.
- Commas in lists and complex sentences; correct apostrophes.
- Capital letters and full stops used correctly throughout.
- No run-ons or unintended sentence fragments.



1

New shrew predator — best prediction

✓ Correct Answer: B — Grasshoppers increase, grass declines

Fewer shrews → fewer grasshoppers eaten → more grasshoppers → more grass eaten → grass declines. With fewer shrews, frogs gain food (so frogs rise, not fall) and foxes lose food (so foxes fall).

WHY THE OTHER OPTIONS ARE WRONG

- A Fewer shrews means more food for frogs, so frogs rise.
- C The fox loses a prey species, so it would not increase.
- D Rabbits eat grass directly and aren't strongly affected here.

2

Two chemical changes

✓ Correct Answer: B — Q (burning) and S (rusting)

Burning wood (Q) and rusting iron (S) both form entirely new substances. Melting ice (P), dissolving salt (R) and shattering glass (T) are physical — no new substance is made.

WHY THE OTHER OPTIONS ARE WRONG

- A Melting and dissolving are physical changes.
- C Melting and shattering form no new substance.
- D Dissolving and shattering are physical changes.

3

Order of organisms, oldest to most recent

✓ Correct Answer: C — No life → Insects → Shells → Reptiles

In undisturbed rock the lowest layer is oldest. Reading bottom to top: Layer 4 (no fossils) → Layer 3 (insects) → Layer 2 (shells) → Layer 1 (reptiles).

WHY THE OTHER OPTIONS ARE WRONG

- A Leaves out the oldest layer (no fossils) at the bottom.
- B Reversed — the top layer is the youngest, not the oldest.
- D Reads the cliff upside down; the bottom layer is oldest.

4

Series circuit — L1 removed

✓ Correct Answer: B — L2 goes out — the circuit is broken

A series circuit is a single path, so a break anywhere stops the current everywhere. L2 goes completely dark — it does not merely dim. (Dimming happens in parallel circuits.)

WHY THE OTHER OPTIONS ARE WRONG

- A A broken series circuit carries no current at all.
- C Dimming happens in parallel circuits, not a broken series.
- D With the loop open, no current flows.

5 Fresh vs processed food data

✓ Correct Answer: B — Processed: more sodium, less vitamin C

Sodium rises sharply and vitamin C falls in every canned version shown. Salmon protein actually rises (so 'always reduces protein' and 'less nutritious in every category' are wrong), and fresh foods still contain some sodium.

WHY THE OTHER OPTIONS ARE WRONG

- A Canned salmon protein actually rose (20 → 22 g).
- C Fresh foods still show some sodium (e.g. 5 mg).
- D Salmon protein increased, so not 'every category'.

6 Animals detecting both infrasound AND ultrasound

✓ Correct Answer: C — 2 animals

Only an animal whose bar starts below 20 Hz AND ends above 20,000 Hz qualifies. Reading the graph carefully, exactly two animals meet both conditions.

WHY THE OTHER OPTIONS ARE WRONG

- A At least some bars cross both zones.
- B Two bars, not one, reach below 20 Hz and above 20,000 Hz.
- D Most animals reach only one of the two zones.

7 Greatest daily temperature variation

✓ Correct Answer: D — Spring (range 14 °C)

Read the daily-range column: Summer 12, Autumn 9, Winter 8, Spring 14. Spring has the greatest variation — don't confuse highest temperature (summer) with greatest range.

WHY THE OTHER OPTIONS ARE WRONG

- A Summer is hottest, but its daily range is 12 °C.
- B Autumn's range is only 9 °C.
- C Winter has the smallest range, 8 °C.

8 Sound wave — which is louder?

✓ Correct Answer: B — Wave B — larger amplitude

Loudness depends on amplitude; pitch depends on wavelength. Wave B has a larger amplitude with the same wavelength, so it is louder at the same pitch.

WHY THE OTHER OPTIONS ARE WRONG

- A Same amplitude — same loudness, just lower pitch.
- C Smaller amplitude is quieter.
- D Same amplitude — not louder, just higher pitch.

9

River pollution conclusion

✓ **Correct Answer: B — Worst at discharge, recovering downstream**

The drop is worst at the discharge point (20 → 7) and at Point C (21 → 9), with Point D recovering (22 → 19) and Point A barely affected. That is severe local impact with downstream recovery.

WHY THE OTHER OPTIONS ARE WRONG

- A** Point A barely changed while Point B dropped sharply.
- C** The before-counts were high and similar everywhere.
- D** The data gives no information about time.

10

Partial small intestine removal

✓ **Correct Answer: B — Harder to absorb nutrients**

Removing part of the small intestine reduces the surface area for nutrient absorption, so fewer nutrients are absorbed. Water absorption (large intestine) is unaffected, and only part is removed, so some absorption remains.

WHY THE OTHER OPTIONS ARE WRONG

- A** Water is absorbed in the large intestine, which is intact.
- C** Other organs have different jobs and can't replace absorption.
- D** Bile comes from the liver/gall bladder, not the removed part.

1 Point closest to $\frac{2}{3}$

✓ **Correct Answer: B — Point Q**

$\frac{2}{3} = 0.666\dots \approx 0.67$. Point Q ≈ 0.7 is closest. Convert fractions to decimals for number-line questions.

WHY THE OTHER OPTIONS ARE WRONG

- A $P \approx 0.3$, well below $\frac{2}{3}$.
- C $R \approx 1.1$, past 1 — too far right.
- D $S \approx 1.4$, far beyond $\frac{2}{3}$.

2 $437 \div 28$ buses

✓ **Correct Answer: B — 16 buses, 17 on the last**

$28 \times 15 = 420$, and $437 - 420 = 17$. So 15 full buses plus one more for the remaining 17 — that's 16 buses, with 17 on the last bus.

WHY THE OTHER OPTIONS ARE WRONG

- A 15 buses seat only 420; 17 students would be left behind.
- C Those 17 still need a 16th bus — 15 is not enough.
- D The remainder is 17, not 9.

3 Jessica's total distance

✓ **Correct Answer: B — 7.75 km**

Convert first: $1850 \text{ m} = 1.85 \text{ km}$; $2 \text{ km } 400 \text{ m} = 2.4 \text{ km}$. Then $3.5 + 1.85 + 2.4 = 7.75 \text{ km}$.

WHY THE OTHER OPTIONS ARE WRONG

- A Mis-converts one of the distances.
- C Mis-converts 1850 m to km.
- D Drops part of the 2 km 400 m conversion.

4 Net for a triangular prism

✓ **Correct Answer: B — Net B (3 rectangles + 2 triangles)**

A triangular prism has 5 faces: 2 triangular ends and 3 rectangular sides. Net B shows exactly that. Net A is a cube, C a square pyramid, D a cuboid.

WHY THE OTHER OPTIONS ARE WRONG

- A Six squares fold into a cube.
- C Triangles around a base make a pyramid.
- D Six rectangles make a cuboid.

5 Deb, Abby and Carl seating arrangements

✓ Correct Answer: C — 12 arrangements

Adjacent seat-pairs for D&A: 3 (seats 1–2, 2–3, 3–4). D and A can swap: $\times 2 = 6$. Carl then chooses one of 2 remaining seats: $\times 2$. Total = $6 \times 2 = 12$.

WHY THE OTHER OPTIONS ARE WRONG

- A Counts the D&A positions but forgets Carl's 2 seat choices.
- B Doesn't match $3 \text{ positions} \times 2 \text{ swaps} \times 2 \text{ seats}$.
- D Over-counts the seats available to Carl.

6 Rectangle area 36 m^2 — valid perimeter

✓ Correct Answer: A — 40 metres

Factor pairs of 36 give perimeters: $(2,18) \rightarrow 40$, $(3,12) \rightarrow 30$, $(4,9) \rightarrow 26$, $(6,6) \rightarrow 24$. Only 40 appears in the options. 37 is odd, so impossible.

WHY THE OTHER OPTIONS ARE WRONG

- B An odd perimeter is impossible with whole-number sides.
- C No factor pair of 36 gives a perimeter of 20.
- D Too small — the minimum (6×6) gives 24.

7 Aisha's train journey

✓ Correct Answer: B — 1 hour 20 minutes

She arrives 13:30, so Train 2 (13:20) has already gone. She catches Train 3: $18:55 \rightarrow 20:15 = 1 \text{ hour } 20 \text{ minutes}$. The trap is assuming she catches Train 2.

WHY THE OTHER OPTIONS ARE WRONG

- A Train 3 runs $18:55 \rightarrow 20:15$, which is 1 h 20 min.
- C Miscalculates the $18:55 \rightarrow 20:15$ interval.
- D That would be $18:55 \rightarrow 20:25$.

8 Angle x with parallel lines

✓ Correct Answer: A — 65°

Corresponding angles between parallel lines are equal, so $x = 65^\circ$. (115° would be the co-interior angle, which adds to 180° .)

WHY THE OTHER OPTIONS ARE WRONG

- B That is the co-interior angle (adds to 180°).
- C Not an angle formed by these parallel lines.
- D The lines are not perpendicular.

9 Maya's flour — mixed numerals

✓ Correct Answer: A — $4\frac{1}{2}$ cups

$4 \times 1\frac{3}{4} = 7$ cups needed. She has $2\frac{1}{2}$, so $7 - 2\frac{1}{2} = 4\frac{1}{2}$ cups more. (Common error: treating $4 \times 1\frac{3}{4}$ as $4\frac{3}{4}$.)

WHY THE OTHER OPTIONS ARE WRONG

- B $7 - 2\frac{1}{2} = 4\frac{1}{2}$, not 5.
- C Comes from mis-multiplying $4 \times 1\frac{3}{4}$.
- D Ignores the $2\frac{1}{2}$ cups already measured.

10 Comparing Class A and Class B

✓ Correct Answer: B — Class B performed better

Class B has $7+6+4 = 17$ students scoring 8 or above; Class A has $6+3+1 = 10$. Class B performs better. Their modes differ too (A = 7, B = 8).

WHY THE OTHER OPTIONS ARE WRONG

- A Both classes have 24 students.
- C Class B has more high scores (8 and above).
- D The modes differ — Class A is 7, Class B is 8.

11 Equivalent to 24×25

✓ Correct Answer: A — $24 \times 20 + 24 \times 5$

By the distributive law, $24 \times 25 = 24 \times (20 + 5) = 24 \times 20 + 24 \times 5 = 480 + 120 = 600$.

WHY THE OTHER OPTIONS ARE WRONG

- B Equals 580, not 600.
- C Equals 504.
- D Equals 624 by order of operations.

12 Alex, Ben and Cara

✓ Correct Answer: D — 44

Let Ben = b . Then Alex = $2b$ and Cara = $b + 12$. So $b + 2b + (b + 12) = 100 \rightarrow 4b = 88 \rightarrow b = 22$. Alex = $2 \times 22 = 44$ (Ben 22, Cara 34).

WHY THE OTHER OPTIONS ARE WRONG

- A Doesn't satisfy Alex = $2 \times$ Ben with the given sum.
- B Would need Ben = 20, but then the total isn't 100.
- C Would make Ben = 24 and the sum 106.

1 Find & Replace with Match case ticked

✓ Correct Answer: B — 2 words

With Match case ticked, only the exact lowercase 'data' matches. There are two lowercase instances, so 2 words change; the capitalised 'Data' is left unchanged.

WHY THE OTHER OPTIONS ARE WRONG

- ☐ A There are two lowercase 'data' instances.
- ☐ C The capitalised 'Data' is excluded by Match case.
- ☐ D Match case treats 'data' and 'Data' as different.

2 Formula =B2*C2 filled down to D4

✓ Correct Answer: B — =B4*C4

Filling down increases the row number by 1 each row, so D4 becomes =B4*C4. The column letters stay the same because the fill is downward, not across.

WHY THE OTHER OPTIONS ARE WRONG

- ☐ A Filling down updates the row numbers.
- ☐ C Both row references change together, not just one.
- ☐ D Fill copies the multiply formula; it doesn't add cells.

3 URL — which part shows Australian registration?

✓ Correct Answer: D — au — the country code

The country-code top-level domain at the end of the address (.au = Australia) shows where a site is registered. 'https' is the protocol, 'science' the chosen name, 'edu' the organisation type.

WHY THE OTHER OPTIONS ARE WRONG

- ☐ A Shows the security protocol, not the country.
- ☐ B Shows it is an educational site, not the country.
- ☐ C Just the chosen site name.

4 Flowchart loop output

✓ Correct Answer: A — 10, 7, 4, 1

$n = 10, 7, 4, 1$ are each displayed (each passes ' $n < 1$? NO'). When $n = 1$, 1 is NOT less than 1, so it is displayed; only after subtracting to -2 does the check pass and the loop ends. So -2 is never displayed.

WHY THE OTHER OPTIONS ARE WRONG

- B 1 is displayed before the check ends the loop.
- C -2 fails the check before it can be displayed.
- D 10 is displayed first.

5 What can the CC recipient see?

✓ Correct Answer: B — Mr Jones and the classmate's own address

The To and CC fields are visible to all recipients, so the classmate sees Mr Jones and their own CC address. The BCC parent is hidden — that is the whole point of BCC.

WHY THE OTHER OPTIONS ARE WRONG

- A CC recipients can also see each other's addresses.
- C BCC hides the parent's address from everyone.
- D The To and CC fields are always visible.

6 Database two-condition filter

✓ Correct Answer: A — Desert Rose and Star Child

AND means both conditions must hold. Fiction books are Ocean Blue, Red Planet, Desert Rose and Star Child; of these, only Desert Rose and Star Child have 5 stars.

WHY THE OTHER OPTIONS ARE WRONG

- B Ocean Blue has only 4 stars.
- C Both Code Wizard and AI World are Non-fiction.
- D Red Planet has 3 stars.

7 Animation pane — clicks needed

✓ Correct Answer: B — 2 clicks

Click 1 plays the Title; the Image then plays automatically (After Previous, no click). Click 2 plays the Bullet points. Total = 2 clicks.

WHY THE OTHER OPTIONS ARE WRONG

- A The On-Click bullet points need a second click.
- C The Image plays automatically (After Previous).
- D Only two objects require a click.

8 REPEAT...UNTIL pseudocode

✓ Correct Answer: C — 32

REPEAT runs the body first, then checks. $2 \rightarrow 4 \rightarrow 8 \rightarrow 16$ (16 is not > 20 , so loop again) $\rightarrow 32$. Now $32 > 20$, so the loop ends and outputs 32.

WHY THE OTHER OPTIONS ARE WRONG

- A 16 is not greater than 20, so the loop runs again.
- B The values double (...16, 32) — 20 never occurs.
- D The loop stops at 32, before doubling again.

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