

Worksheet: PRACTICE MATHS SET 1 H

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$\text{Probability} = \frac{\text{Successful Outcomes}}{\text{Total Outcomes}}$$

$$a^m \times a^n = a^{m+n}$$

Question 1**(Total for question 1 is 1 mark)**

A straight line is drawn on a grid passing through points $A(2, 3)$ and $B(5, 7)$. The line is flipped over the vertical y -axis to make a new line with corners A' and B' . What are the grid numbers for corner B' ?

- A) (5, -7)
- B) (-5, 7)
- C) (-2, 3)
- D) (-5, -7)

Question 2**(Total for question 2 is 1 mark)**

A disease hits trees in a fruit orchard. The apple harvest drops by 15% compared to last year. This year, the orchard makes 680 kg of apples. How many kilograms of apples did the orchard make last year?

- A) 782 kg
- B) 750 kg
- C) 800 kg
- D) 850 kg

Question 3**(Total for question 3 is 1 mark)**

A game spinner is split into uneven parts. The chance of landing on Gold is $\frac{1}{6}$, and the chance of landing on Silver is $\frac{2}{5}$. If the only other section is Bronze, what is the chance of landing on Bronze?

- A) $\frac{13}{30}$
- B) $\frac{3}{11}$
- C) $\frac{17}{30}$
- D) $\frac{7}{30}$

Question 4**(Total for question 4 is 1 mark)**

Look at this math rule: $2^3 \times 2^x \times 2^4 = 2^{12}$. What is the value of the missing power number x ?

- A) 5
 - B) 1
 - C) 9
 - D) 4
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Question 5**(Total for question 5 is 1 mark)**

A rectangular stone path measures 14 m by 10 m. Inside this path is a square grass lawn with a side length of 6 m. Find the area of the stone path that is left uncovered by the lawn.

- A) 140 m^2
- B) 104 m^2
- C) 76 m^2
- D) 24 m^2

Question 6**(Total for question 6 is 1 mark)**

Look at these two math rules: $5A - 2B = K$ and $15A - 6B + 4 = 31$. Find the correct matching number for K .

- A) 9
- B) 27
- C) 7
- D) 11

Question 7**(Total for question 7 is 1 mark)**

A solid building block is shaped like a cube. The total outer surface area of all 6 flat faces combined is 294 cm^2 . What is the total volume space inside this building block?

- A) 343 cm^3
- B) 49 cm^3
- C) 216 cm^3
- D) 729 cm^3

Question 8**(Total for question 8 is 1 mark)**

Look at this fraction pattern: $\frac{1}{2}, \frac{5}{6}, \frac{7}{6}, \frac{3}{2}, \dots$ What fraction should come next in this pattern?

- A) $\frac{11}{6}$
 - B) $\frac{5}{3}$
 - C) $\frac{13}{6}$
 - D) $\frac{2}{3}$
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Question 9**(Total for question 9 is 1 mark)**

Find the value of y that makes this math statement correct: $\sqrt{3.5 + y} = 0.3 \times 10$

- A) 5.5
- B) 6.5
- C) 2.5
- D) 0.5

Question 10**(Total for question 10 is 1 mark)**

A security door creates a passcode using four different odd digits. The digits must go down in size from left to right. If the 4-digit code divides exactly by 9, what is the code?

- A) 9753
- B) 9531
- C) 7531
- D) 9351

Question 11**(Total for question 11 is 1 mark)**

Three farms count their animals. Farm Alpha has n sheep. Farm Beta has 10 fewer sheep than Farm Alpha. Farm Gamma has exactly half the number of sheep that Farm Beta has. Find the formula for the total number of sheep across all three farms.

- A) $2.5n - 15$
- B) $3n - 20$
- C) $2.5n - 10$
- D) $2n - 15$

Question 12**(Total for question 12 is 1 mark)**

A map drawing scales down a real playground using a scale rule of 1 : 50. On the flat map drawing, the playground is a rectangle measuring 12 cm by 8 cm. What is the actual perimeter around the real physical playground in meters?

- A) 20 m
 - B) 40 m
 - C) 10 m
 - D) 50 m
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Question 13**(Total for question 13 is 1 mark)**

A workshop mixes a layout compound using 1 part sand, 4 parts clay, and 5 parts limestone by weight. If the batch runs out after using exactly 36 kg of clay, what is the total weight of the whole completed mixture?

- A) 45 kg
- B) 100 kg
- C) 90 kg
- D) 80 kg

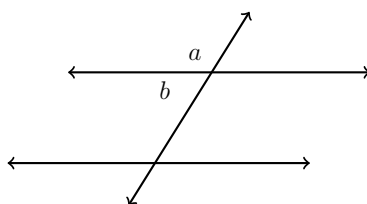
Question 14**(Total for question 14 is 1 mark)**

Look at this balancing equation: $7x - 3 = 4x + 18$. What number matches the value of x ?

- A) 5
- B) 7
- C) 6
- D) 8

Question 15**(Total for question 15 is 1 mark)**

Two parallel lines are crossed by a straight sloping line, as shown in the picture below. If angle a measures 65° , what is the size of angle b next to it on the same straight line?



- A) 65°
- B) 125°
- C) 115°
- D) 295°

Question 16

(Total for question 16 is 1 mark)

A vehicle ferry carries a total of 35 vehicles. It contains only 4-wheeled cars and 8-wheeled delivery trucks. If the deck loader counts exactly 180 wheels on the floor altogether, how many delivery trucks are inside the ferry?

- A) 10
- B) 15
- C) 20
- D) 25

Question 17**(Total for question 17 is 1 mark)**

A youth group answers a survey about sports. The counts show that 25 children like swimming, 18 like tennis, and 7 like both swimming and tennis. If there are 4 children who do not like either sport, how many total children took part in the survey?

- A) 47
- B) 40
- C) 36
- D) 43

Question 18**(Total for question 18 is 1 mark)**

A drone flies along a straight track that is 15 km long at a steady speed of 20 km per hour. A model airplane flies a longer route measuring 24 km. If both items finish their flights in the exact same time duration, what was the average speed of the model airplane?

- A) 32 km/h
- B) 28 km/h
- C) 30 km/h
- D) 36 km/h

Question 19**(Total for question 19 is 1 mark)**

Look at this set of temperatures recorded inside a science lab room: -9°C , -3°C , 1°C , 3°C , 8°C , 12°C . What number do you get when you subtract the median from the mean?

- A) 0.5°C
- B) 2.0°C
- C) 1.0°C
- D) 0.0°C

Question 20**(Total for question 20 is 1 mark)**

At exactly 14:15, a train ride is halfway through its total scheduled trip time. At 14:39, the dashboard shows that there is exactly 10% of the trip time left before reaching the final station. At what time did the train leave the starting station?

- A) 13:45
 - B) 13:55
 - C) 13:35
 - D) 13:50
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Solutions

1. **B** — Flipping a point (x, y) across the vertical y-axis changes the sign of the first number: $(5, 7) \rightarrow (-5, 7)$.
2. **C** — Finding the baseline drop calculation: $0.85x = 680 \implies x = 680 \div 0.85 = 800$ kg.
3. **A** — Subtracting fractions from a whole: $1 - (\frac{1}{6} + \frac{2}{5}) = 1 - \frac{17}{30} = \frac{13}{30}$.
4. **A** — Adding index components rule: $3 + x + 4 = 12 \implies 7 + x = 12 \implies x = 5$.
5. **B** — Leftover area calculation: $(14 \times 10) - (6 \times 6) = 140 - 36 = 104 \text{ m}^2$.
6. **A** — Factoring groups: $15A - 6B = 3(5A - 2B) = 3K \implies 3K + 4 = 31 \implies 3K = 27 \implies K = 9$.
7. **A** — Surface faces equation: $6s^2 = 294 \implies s^2 = 49 \implies s = 7 \text{ cm}$. Volume $= 7^3 = 343 \text{ cm}^3$.
8. **A** — Pattern steps grow by a common difference of $+\frac{2}{6}$: $\frac{3}{6}, \frac{5}{6}, \frac{7}{6}, \frac{9}{6} \implies \frac{11}{6}$.
9. **A** — Square root reversing: $\sqrt{3.5 + y} = 3 \implies 3.5 + y = 9 \implies y = 5.5$.
10. **B** — Token code constraints: Non-repeating odd digits 9, 5, 3, 1 are in descending order and add up to 18 ($9 + 5 + 3 + 1 = 18$). Because 18 is a multiple of 9, the number is exactly divisible by 9.
11. **A** — Formula layout setup steps: $n + (n - 10) + 0.5(n - 10) = 2.5n - 15$.
12. **A** — Scale rules: Length $= 12 \times 50 = 600 \text{ cm} = 6 \text{ m}$. Width $= 8 \times 50 = 400 \text{ cm} = 4 \text{ m}$. Perimeter $= 2 \times (6 + 4) = 20 \text{ m}$.
13. **C** — Mixture scaling: 4 parts $= 36 \text{ kg} \implies 1 \text{ part} = 9 \text{ kg}$. Total weight $= 10 \times 9 = 90 \text{ kg}$.
14. **B** — Balancing algebraic values: $7x - 4x = 18 + 3 \implies 3x = 21 \implies x = 7$.
15. **C** — Angles on a straight line add up to 180° : $180^\circ - 65^\circ = 115^\circ$.
16. **A** — Double-variable system loops: $c + t = 35, 4c + 8t = 180 \implies 4t = 40 \implies t = 10$ trucks.
17. **B** — Group sets calculation via Venn parameters: $(25 - 7) + 7 + (18 - 7) + 4 = 18 + 7 + 11 + 4 = 40$ children altogether.
18. **A** — Duration speed equations: Flight time $= 15 \div 20 = 0.75$ hours. Airplane speed $= 24 \div 0.75 = 32 \text{ km/h}$.
19. **D** — Central values math array audit: Mean $= (-9 - 3 + 1 + 3 + 8 + 12) \div 6 = 12 \div 6 = 2.0^\circ\text{C}$. Sorted median $= (1 + 3) \div 2 = 2.0^\circ\text{C}$. Absolute difference $= 2.0 - 2.0 = 0.0^\circ\text{C}$.
20. **A** — Elapsed duration blocks: From 14:15 to 14:39 is 24 mins, matching $50\% - 10\% = 40\%$ of trip $\implies$ Total trip $= 60$ mins. Halfway at 14:15 means it has run for 30 mins $\implies$ Start time $= 13 : 45$.