



Mathematics – Sample Test

Time allowed for this paper : 60 minutes

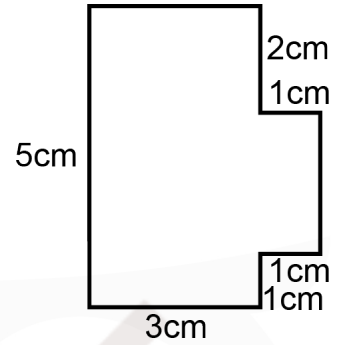
Instructions for Best Practice:

- > Attempt all of the questions.
- > Ensure that your answers are clearly marked in the answer boxes.
- > Calculators and rulers must not be used.
- > Equipment recommended: 2 x Pencil & 1 x Eraser.

1) Calculate the area of the shape. Choose your answer from the following 5 options:

- A. 20 cm^2
- B. 17 cm^2
- C. 18 cm^2
- D. 16 cm^2
- E. 15 cm^2

Answer:

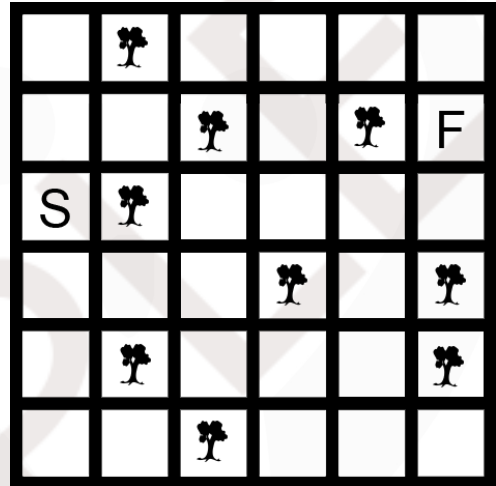


2) Solve the following problem involving navigation. Choose your answer from the 5 options given:

Sidhika is programming her lawnmower with a simple algorithm that will allow it to avoid the trees in the back yard. The algorithm only allows the directions FORWARD, TURN RIGHT 90° , and TURN LEFT 90° to be programmed in. What instructions will take it from the point on the map marked S and facing east to the point marked F, without hitting any trees?

- A. RIGHT 90° , FORWARD 3, LEFT 90° , FORWARD 2, LEFT 90° , FORWARD 1, RIGHT 90° , FORWARD 3, LEFT 90° , FORWARD 1
- B. RIGHT 90° , FORWARD 1, LEFT 90° , FORWARD 2, LEFT 90° , FORWARD 1, RIGHT 90° , FORWARD 3, LEFT 90° , FORWARD 1
- C. RIGHT 90° , FORWARD 1, LEFT 90° , FORWARD 2, LEFT 90° , FORWARD 2, RIGHT 90° , FORWARD 3, LEFT 90° , FORWARD 1
- D. RIGHT 90° , FORWARD 1, LEFT 90° , FORWARD 1, RIGHT 90° , FORWARD 1, RIGHT 90° , FORWARD 3, LEFT 90° , FORWARD 1
- E. LEFT 90° , FORWARD 1, LEFT 90° , FORWARD 2, LEFT 90° , FORWARD 1, RIGHT 90° , FORWARD 3, LEFT 90° , FORWARD 1

Answer:

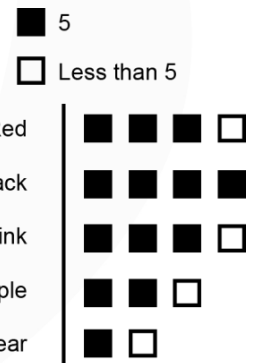


3) Solve the following problem using the pictogram. Choose your answer from the 5 options given:

The pictogram shows the number of different colours of lipstick that were sold this week. How many pink lipsticks were sold this week?

- A. 3
- B. 4
- C. 15
- D. 17
- E. 20

Answer:



4) Solve the following problem involving division. Choose your answer from the 5 options given:

Work out the question to the right:

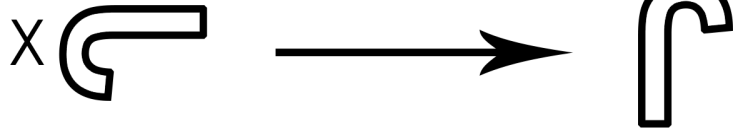
- A. 35
- B. 37
- C. 39
- D. 41
- E. 43

Answer:

$$\begin{array}{r} 195 \\ \div 5 \\ \hline \end{array} \quad ?$$

- 5) Solve the following problem involving transformations.
Choose your answer from the 5 options given:

How has shape X been transformed?



- A. Rotated 90 degrees clockwise
- B. Rotated 90 degrees counter-clockwise
- C. Reflected and rotated 45 degrees clockwise
- D. Reflected and rotated 90 degrees counter-clockwise
- E. Reflected and rotated 45 degrees counter-clockwise

Answer:

- 6) Solve the following volume and capacity problem.
Choose your answer from the 5 options given:

Erik uses 2cm^3 blocks to make a box. What is the volume of his box?

- A. 9cm^3
- B. 24cm^3
- C. 12cm^3
- D. 48cm^3
- E. 36cm^3

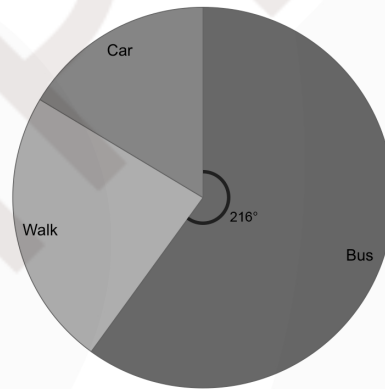


Answer:

- 7) Solve the following problem involving pie charts.
Choose your answer from the 5 options given:

The pie chart shows how a class of 30 children travel to school. How many travel by bus?

- A. 18
- B. 15
- C. 10
- D. 20
- E. 22



Answer:

- 8) Find the option that best completes the sequence. Fill in the missing blank by selecting one of the following 5 options.

5, 10, 15, ___?

- A. 20
- B. 25
- C. 30
- D. 21
- E. 22

Answer:

- 9) Inside the brackets there is a number that has been formed through a function to the two numbers outside the brackets. The function to the two outside numbers stays the same for the question. What is the missing number?

$10(9)90$, $3(3)?$, $50(10)5$

- A. 3
- B. 7
- C. 9
- D. 27
- E. 1

Answer:

- 10) The first number has been manipulated in some way to get to the next number. What is the function that leads the first number to become the second number? NB: some options take the first number as y .
Choose your answer from the 5 options given:

$2 \rightarrow 6$

- A. $\times 2 + 2$
- B. $\times 3 + 2$
- C. $+ 5$
- D. $+ 6$
- E. $+ 6 - 4$

Answer:

- 11) The numbers in the set below are all related in some way.
Pick the number from the 5 options given that would best fit into the rules of the set:

1, 27, 8, 64, 125

- A. 216 B. 315 C. 144 D. 169 E. 555

Answer:

- 12) Solve the following problem. Choose your answer from the 5 options given:

In a block of flats there are 1266 flats. In 212 rooms there are single beds, in 611 rooms there are double beds. How many rooms have neither single nor double beds?

- A. 467 B. 537 C. 474 D. 443 E. 523

Answer:

- 13) Solve the following problem below involving monetary change. Choose your answer from the 5 options given:

Sean and Ravi go to a café and get a coffee that was £2.30 each.
They then split a slice of cake that is £1.20 in total.
They ask to leave a tip of 10%, and pay with a £10 note. How much change do they get?

- A. £6.38 B. £3.62 C. £3.38 D. £3.48 E. £1.38

Answer:

- 14) Find the missing number in the table. Choose your answer from the 5 options given:

The Library 645 has books. The table shows the number of fiction and non-fiction books with different colour covers. How many green fiction books are there?

	Fiction books	Non-fiction books
Black	46	43
Blue	32	53
Red	26	43
Grey	64	25
Green	?	46
Purple	84	73
Pink	54	32

- A. 36 B. 34 C. 26 D. 24 E. 44

Answer:

- 15) Solve the following problem involving fractions. Choose your answer from the 5 options given:

The teacher marks 48 questions in a spelling test. 16 questions are wrong.
What fraction of the questions were right?

- A. $\frac{1}{2}$ B. $\frac{2}{3}$ C. $\frac{1}{4}$ D. $\frac{1}{3}$ E. $\frac{2}{4}$

Answer:

- 16) Solve the following algebraic problem. Choose your answer from the 5 options given:

Given the following equation, if $b = 8$, what is y ?
 $12b + 6 \times 7 = y$

- A. 138 B. 135 C. 128 D. 62 E. 182

Answer:

- 17) Solve the following multiplication problem. Choose your answer from the 5 options given:

This year, my age is a multiple of 5. Next year it will be a multiple of 6.
I am older than 10 but younger than 60. How old am I?

- A. 30 B. 25 C. 42 D. 35 E. 40

Answer:

- 18) Solve the following rounding problem. Choose your answer from the 5 options given:

What is $\frac{1}{4}$ of 37 rounded to the nearest whole number?

- A. 9.2 B. 9.3 C. 10 D. 9 E. 9.5

Answer:

19) Solve the following problem. Choose your answer from the 5 options given:

A class of 10 students take a maths test. Here are their scores out of 20.

16, 11, 15, 17, 11, 20, 14, 11, 15, 18

Which of the following options shows the correct mode and range of the scores?

- A. Mode: 15; Range: 9 B. Mode: 15; Range 7 C. Mode: 11; Range: 9 D. Mode: 11; Range: 10 E. Mode: 9; Range: 11

Answer:

20) Solve the following problem involving number factors. Choose your answer from the 5 options given: Solve: $15^2 \div 3^2$

- A. 5 B. 25 C. 122 D. 24 E. 15

Answer:

21) Solve the following problem involving percentages. Choose your answer from the 5 options given:

Wilbert buys 9 pens costing £1.20 each. He gets a 40% discount on his purchase. How much money does Wilbert save from the purchase?

- A. £6.48 B. £0.48 C. £2.70 D. £0.27 E. £4.32

Answer:

22) Solve the following probability problem. Choose your answer from the 5 options given:

Two fair dice are rolled together and their points are added to give a total.

What is the probability of scoring 7? The probability table has been provided to help you.

	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

- A. $\frac{1}{9}$ B. $\frac{1}{3}$ C. $\frac{1}{6}$ D. $\frac{1}{5}$ E. $\frac{1}{2}$

Answer:

23) Solve the following problem involving negative numbers. Choose your answer from the 5 options given:

Following is a record of temperatures in various countries around the world taken on the same day and time.

Netherlands 2°C
 Germany 0°C
 Slovakia -2°C
 Romania -3°C
 Finland -6°C
 Russia -12°C
 Ireland 3°C

What is the difference between the temperatures in Romania and Ireland?

- A. 9°C B. 0°C C. 1°C D. 6°C E. 3°C

Answer:

24) Solve the following problem involving exchange rates. Choose your answer from the 5 options given:

Kristopher and his friends are on holiday in China. The exchange rate is £1 = 8.80 Yuan.
 A jumper costs 220 Yuan and a scarf costs 132 Yuan.
 If Kristopher buys one jumper and two scarves, what is the total cost in pounds?

- A. £49 B. £52 C. £56 D. £55 E. £50

Answer:

25) Solve the following number puzzle. Choose your answer from the 5 options given:

Add up the numbers below and select the correct answer in figures.

- Twelve million
- Thirty thousand
- One thousand
- Forty-nine

A. 12031049 B. 12030149 C. 12003149 D. 12301049 E. 12003149

Answer:

26) Solve the following time problem. Choose your answer from the 5 options given:

The timetable shows times for a bus from Rodney Green to Wood Green.

Rodney Green	06:50	07:23	07:56	08:29
Sidney Street	07:03	07:36	08:09	08:42
Queens Road	07:11	07:44	08:17	?
College Road	07:19	07:52	08:25	08:58
Wood Green	07:31	08:04	08:37	09:10

Ella and Betty are two sisters living at Rodney Green. Ella's school is on Queens Road and Betty's on Wood Green. If both their schools start at 7:50 am, what is the time difference in minutes in the times they get their buses?

A. 13 B. 33 C. 21 D. 27 E. 19

Answer:

27) Solve the following addition problem. Choose your answer from the 5 options given:

Shelley buys two gift sets costing £31 each and a perfume for £27 and other groceries for £23 from her supermarket. How much is that in total?

A. £112 B. £131 C. £92 D. £111 E. £103

Answer:

28) Solve the following problem involving decimals. Choose your answer from the 5 options given:

Solve: $27.86 + 4.29$

A. 70.76 B. 31.25 C. 31.115 D. 31.35 E. 32.15

Answer:

29) Solve the following problem involving distance and time. Choose your answer from the 5 options given:

A flight travels at a constant speed of 710 miles per hour for thirteen hours. Another flight travels at a constant speed of 840 miles per hour for eleven hours. What is the difference in the distance travelled by the two flights?

A. 130 miles B. 10 miles C. 100 miles D. 50 miles E. 30 miles

Answer:

30) Solve the following problem involving speed. Choose your answer from the 5 options given:

Kuran's car travelled 210 miles in the last 210 minutes. What was the speed of the car during the journey?

A. 10 miles per hour B. 1 mile per hour C. 40 miles per hour D. 60 miles per hour E. 100 miles per hour

Answer:

31) The following problem involves BODMAS. Choose your answer from the following 5 options given:

Solve:

$$9 + 8 \div 4 = 44 \div ?$$

A. 4 B. 5 C. 6 D. 7 E. 8

Answer:

32) Solve the following problem. Choose your answer from the 5 options given:

Calculate the difference between the smallest and the largest numbers of the following numbers.

46%, $\frac{21}{25}$, 0.50, 55%, $\frac{6}{25}$, 0.81

- A. 0.51 B. 0.53 C. 0.34 D. 0.60 E. 0.63

Answer:

33) Solve the following verbal reasoning problem. Choose your answer from the 5 options given:

If $A = 15$, $B = 40$, $C = 4$, $D = 60$, $E = 10$, which of the letters completes the series?

$D \div C \times E = _ \times E$

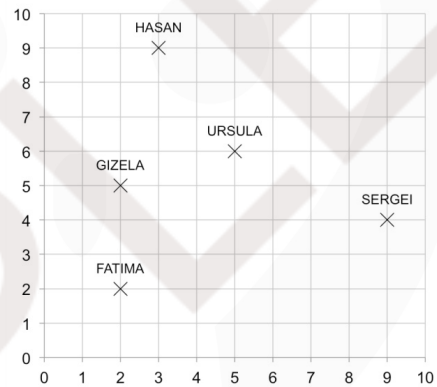
- A. A B. B C. C D. D E. E

Answer:

34) Solve the following problem involving the graph and its coordinates. Choose your answer from the 5 options given:

The grid shows the coordinates of players in a paintball fight. The camouflage tent is at the coordinates (4,6). Who is closest to the camouflage tent?

- A. Hasan
B. Ursula
C. Gizela
D. Sergei
E. Fatima



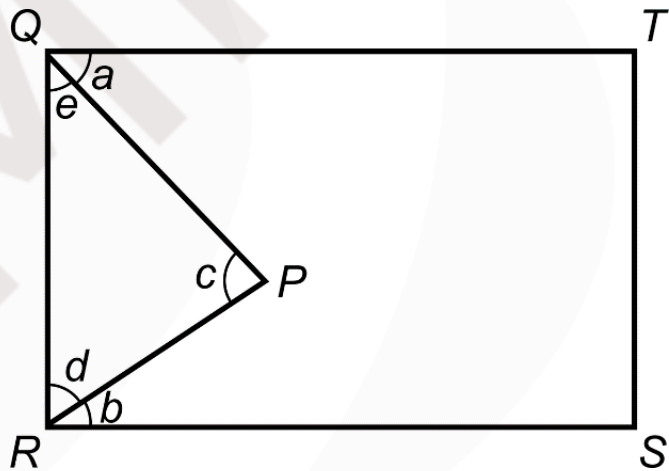
Answer:

35) Solve the following angle problem. Choose your answer from the 5 options given:

Triangle PQR sits inside the rectangle QRST such that a side QR of the triangle forms the line QR of the rectangle. Given the angles below, what is the size of angle c?

$a = 15^\circ$
 $b = 35^\circ$

- A. 75°
B. 55°
C. 165°
D. 50°
E. 145°



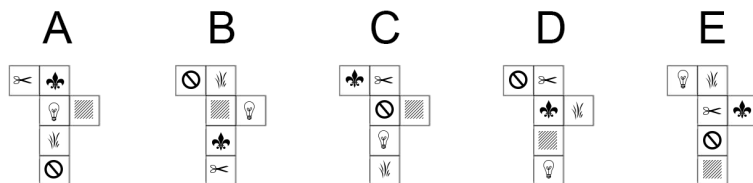
Answer:

36) Solve the following folding net problem. Choose your answer from the 5 options given:

Which one of the following 5 open nets represents the box?



- A. A
B. B
C. C
D. D
E. E



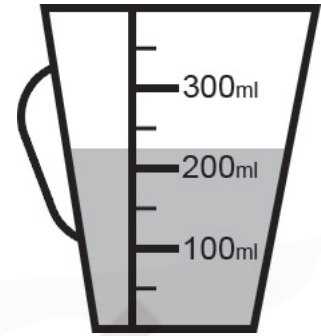
Answer:

37) Solve the following problem. Choose your answer from the 5 options given:

How many ml of water is the jug holding?

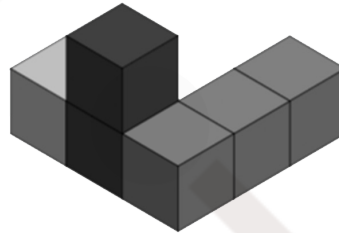
- A. 250 ml
- B. 210 ml
- C. 255 ml
- D. 260 ml
- E. 225 ml

Answer:



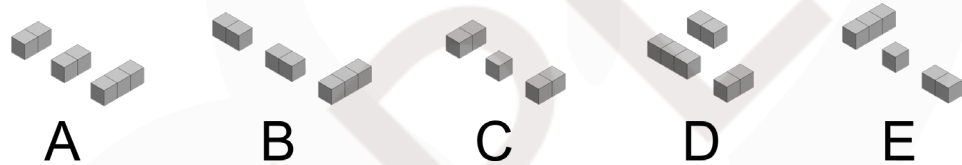
38) Solve the following spatial reasoning problem. Choose your answer from the 5 options given:

The following shape has been made out of 3 blocks. Which of the 5 options shows the 3 blocks used to make the shape?



- A. A
- B. B
- C. C
- D. D
- E. E

Answer:

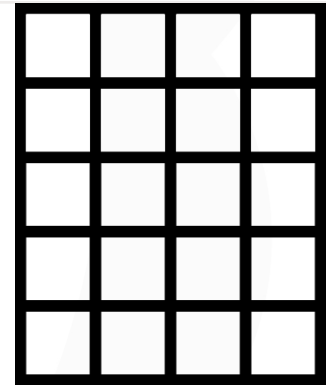


39) Solve the following problem involving shaded shapes. Choose your answer from the 5 options given:

How many squares must be filled in for 25% of the grid to be shaded?

- A. 4
- B. 6
- C. 8
- D. 5
- E. 3

Answer:



40) Solve the following classification tree problem. Choose your answer from the 5 options given:

The classification tree to the right is used to sort musical instruments. What is missing from the empty box?

- A. Is it a percussion instrument?
- B. Is it acoustic?
- C. Is it a drum?
- D. Is it electronic?
- E. Is it a guitar?

Answer:

