MATHEMATICS

PRACTICE TEST

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PRACTICE QUESTIONS
Here are some practice examples to show you what the questions on the real test are like.

Practice Example 1

$$5 + 2 =$$

A: 5   **B**: 6   **C**: 7   **D**: 8   **E**: None of these

Practice Example 2

Which is the largest number?

A: 403   **B**: 4600   **C**: 406   **D**: 4060   **E**: None of these

Practice Example 3

What value does the circled digit in the number above represent?

A: 4879   **B**: 700   **C**: 70   **D**: 7   **E**: None of these

Please fill in your answer on the answer sheet provided.

You will have **30 minutes** to do as many questions as you can.

NO CALCULATORS PERMITTED FOR THIS TEST.

PLEASE DO NOT TURN THIS PAGE UNTIL YOU ARE ASKED TO DO SO.

Question 1

$-10 + -3 - -4 + 5 =$

    A: 2   **B**: -12 **C**: -4 **D**: 16   **E**: None of these

Question 2

$-96 \div -6 \div 8 =$

    A: 2   **B**: 12   **C**: -12 **D**: -2 **E**: None of these

Question 3

Jo bought a used car for $6000 and paid 15% deposit. How much did he still have to pay?

    A: $900   **B**: $5000   **C**: $4500   **D**: $5100   **E**: None of these

Question 4

$5 \times -2 - (8 - 12) + 16 \div -8 =$

    A: 6   **B**: -8 **C**: -16 **D**: -6 **E**: None of these

Question 5

What is 8% of $600?

    A: $580   **B**: $480   **C**: $48   **D**: $58   **E**: None of these

Question 6
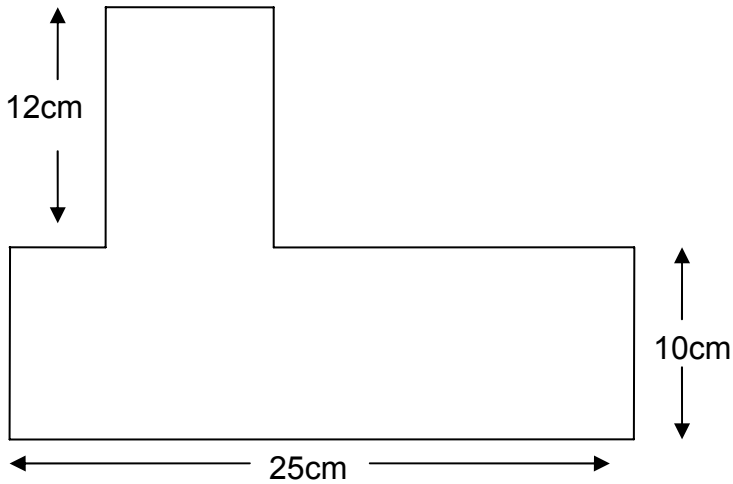
Which is the longest distance?

    A: 3500cm   **B**: 65.5m   **C**: 75000mm   **D**: 15.5m   **E**: 0.1km

Question 7

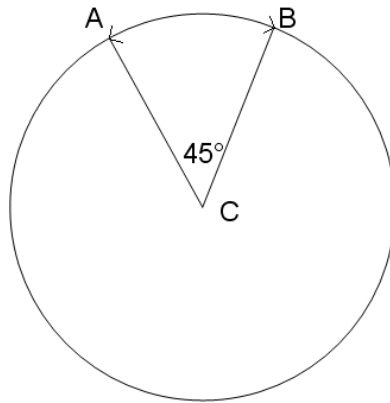The perimeter of the shape is

A: 47cm **B**: 72cm **C**: 69cm **D**: 94cm **E**: Not enough information to find perimeter

Question 8

If the length of the shorter arc $\overset{\frown}{AB}$ is 22cm and C is the centre of the circle, then the circumference of the circle is:

A: 990cm **B**: 67cm **C**: 176cm **D**: 88cm **E**: None of these

Question 9

If 2 fligs make a flog and 3 flogs make a flug, how many fligs in 12 flugs?

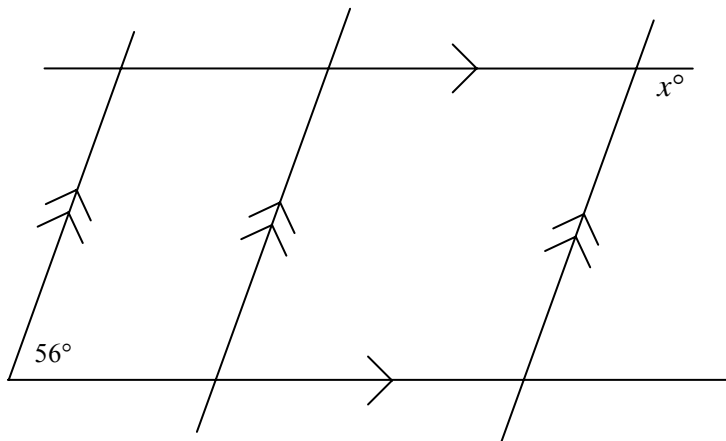**A**: 72 **B**: 17 **C**: 36 **D**: 34 **E**: None of these

Question 10

If $2\,{}^1/_3 : 4\,{}^1/_3$ then $\;7:\;\square\;;\quad\square\;=$

    A: 12   **B**: 13   **C**: $8\,{}^2/_3$ **D**: $6\,{}^1/_3$ **E**: None of these
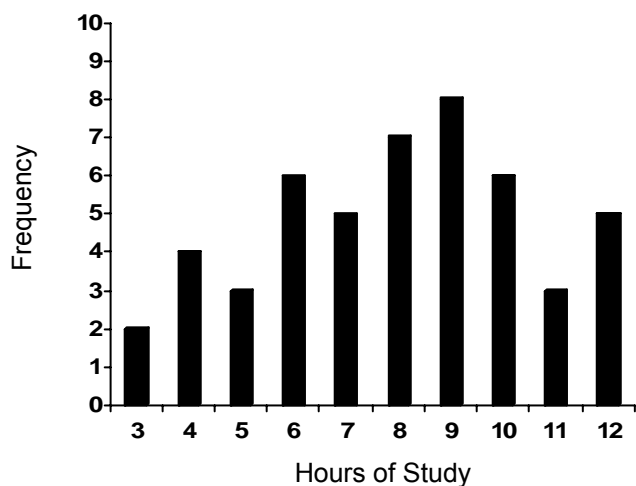

Question 11

Concrete is made by mixing screenings cement and sand in the ratio 3:1:15. How much sand would be needed to make 125 tonnes of concrete?

    A: 27 tonnes   **B**: 33.75 tonnes   **C**: 45 tonnes   **D**: 75 tonnes   **E**: None of these

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Question 12

$a° =$
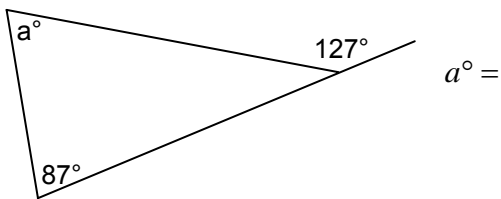
    A: 53   **B**: 40   **C**: 93   **D**: 146   **E**: None of these

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Question 13

$x° =$

A: 124   **B**: 304   **C**: 54   **D**: 66   **E**: None of these

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The graph shows the number of hours a year 8 group spent doing homework for one week.

Question 14

How many students studied for more than 8 hours in the week?

A: 22   **B**: 29   **C**: 42   **D**: 50   **E**: None of these

Question 15

How many students studied for 6 hours or less per week?

A: 9   **B**: 18   **C**: 15   **D**: 12   **E**: None of these

Question 16

Two six sided dice are thrown together. What is the probability that a total of 10 is thrown?

A: $\frac{1}{6}$ **B**: $\frac{1}{12}$ **C**: $\frac{1}{2}$ **D**: $\frac{5}{6}$ **E**: None of these
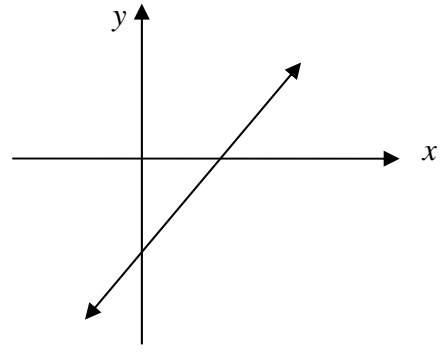
Question 17

The gradient of the line is
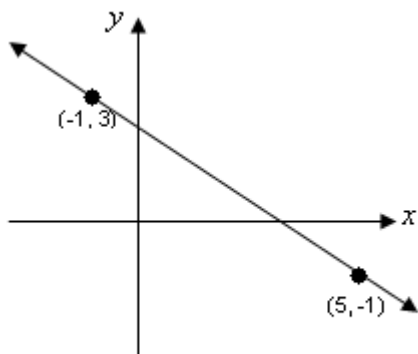
A: $\frac{3}{2}$ **B**: $\frac{2}{3}$ **C**: $-\frac{2}{3}$ **D**: $-\frac{3}{2}$ **E**: None of these

Question 18

The y intercept of the graph could only be:

A: $(4,0)$ **B**: $(0,–3)$ **C**: $(–4,0)$ **D**: $(–3,0)$ **E**: $(0,3)$

Question 19

Which inequation shows the following statement?

x is 6 or less and more than – 5

A: $– 5 < x \leq 6$ **B**: $– 5 > x \leq 6$ **C**: $– 5 \leq x \leq 6$ **D**: $– 5 < x < 6$ **E**: $– 5 \leq x < 6$

Question 20

Expand and simplify

– 6 (2x – 3) – 11
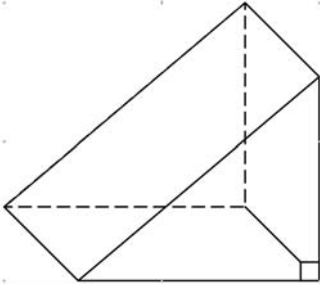
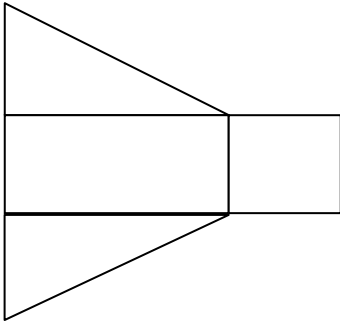**A**: $–12x – 29$ **B**: $7 – 12x$ **C**: $12x – 7$ **D**: $7 + 12x$ **E**: None of these
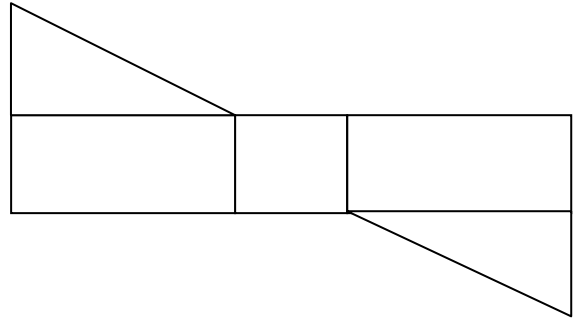

Question 21

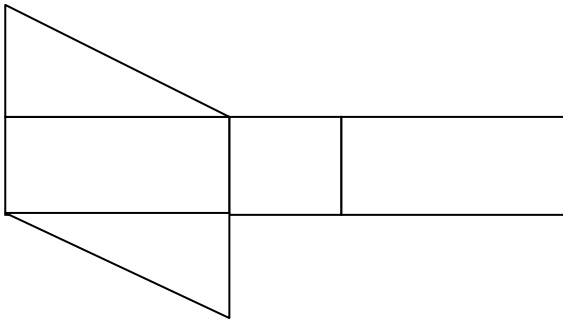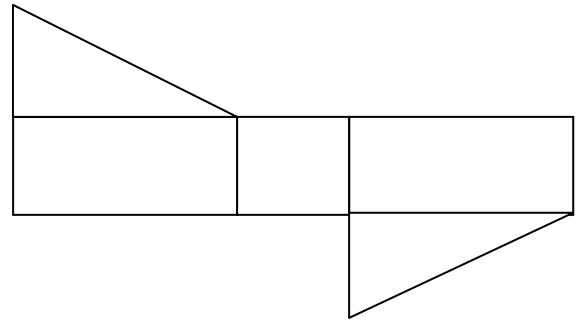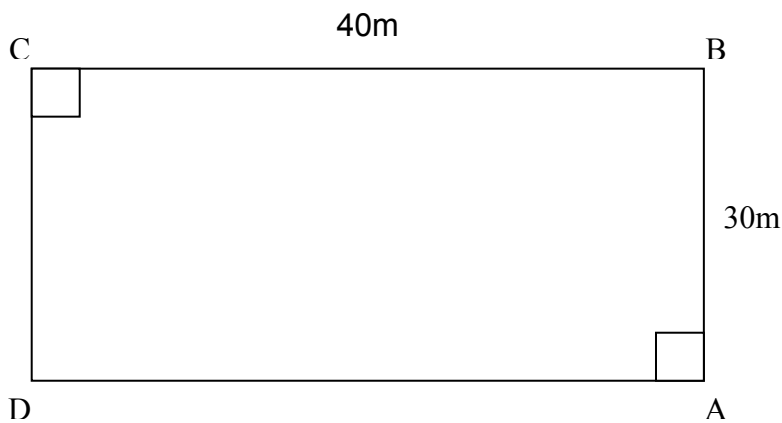Which option would make this solid?

A:

B:

C:

D:

E: None of the nets would make the solid

Question 22

The diagram shows a small rectangular field. If Linda runs from A to B to D to C to A, how far does she run?

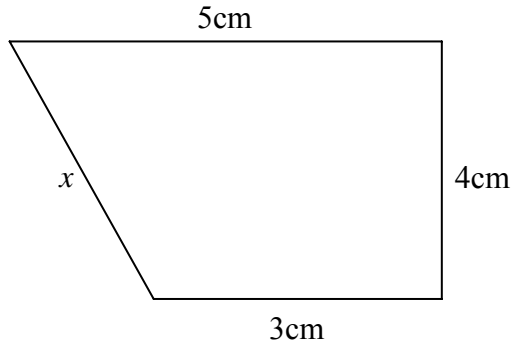**A**: 120m   **B**: 160m   **C**: 140m   **D**: 150m   **E**: None of these

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Question 23

Simplify the surd $3\sqrt{56}$ completely

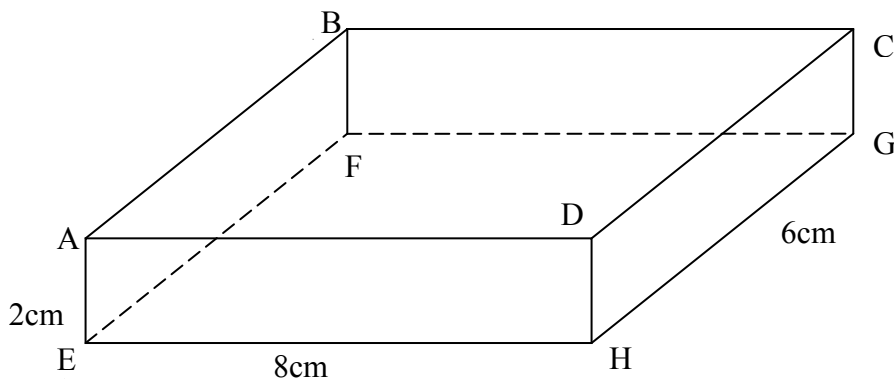**A**: $12\sqrt{14}$ **B**: $5\sqrt{14}$ **C**: $6\sqrt{14}$ **D**: $6\sqrt{28}$ **E**: None of these

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Question 24

The length of x equals

5cm

4cm

x

3cm

A: 6cm

B: $\sqrt{6}cm$

C: $5\sqrt{2}cm$

D: $2\sqrt{5}cm$

E: None of these

Question 25

The rectangle box has dimensions as shown. What is the length $\overline{AG}$?

2cm   8cm   6cm

A: $2\sqrt{26}$

B: $4\sqrt{6}$

C: $2\sqrt{3}$

D: $\sqrt{16}$

E: None of these

Question 26

Sam bought a car valued at $7700. One year later the car's value had decreased by $^2/_7$. What is the new value of the car?

A: $2200   **B**: $5500   **C**: $9900   **D**: $4400   **E**: None of these
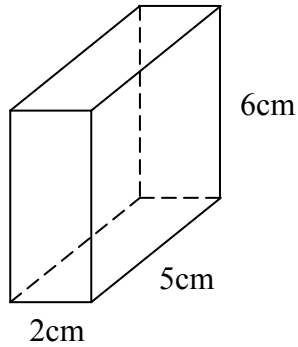
Question 27

If Density = Mass ÷ Volume, what is the Mass of the solid in the diagram if its Density is 1.2gm / cm$^{3?}$

6cm

5cm

2cm

A: 50gm

B: 60gm

C: 72gm

D: 38.4gm

E: None of these

Question 28

What is the speed in m/s of a car that travels 30km in 20 minutes?

    A: 1500 m/s   **B**: 150 m/s   **C**: 90 m/s   **D**: 540 m/s   **E**: None of these

Question 29

If R = $\dfrac{(S+T)P}{3}$ then T equals

A: $\dfrac{3R-S}{P}$ **B**: $\dfrac{PR}{3}-S$ **C**: $\dfrac{3R}{P}+S$ **D**: $\dfrac{3R+S}{P}$ **E**: $\dfrac{3R}{P}-S$

Question 30

Solve the inequation for x

$\dfrac{5(9-x)}{3}+1<11$

    A: $x<3$ **B**: $x>3$ **C**: $x>-3$ **D**: $x>1^4/_5$ **E**: None of these
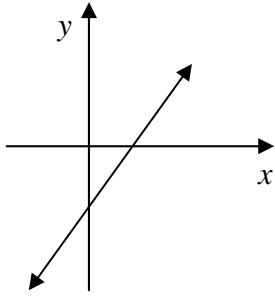
Question 31

Solve for x

$\dfrac{4x-3}{5}-\dfrac{2x-3}{2}=-2$

    A: $x=1\tfrac{11}{18}$ **B**: $x=5\tfrac{1}{2}$ **C**: $x=-5\tfrac{1}{2}$ **D**: $x=14\tfrac{1}{2}$ **E**: $x=-14\tfrac{1}{2}$

Question 32

Which equation could only be the equation of the graph?

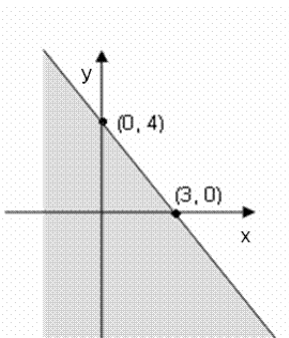**A**: $y = 3x + 2$

B: $y = -3x - 2$

C: $y = 3x - 2$

D: $y = -3 + 2$

E: $y = -x - 2$

Question 33

Which set of coordinates lie outside the shaded area?

A: $(0,0)$
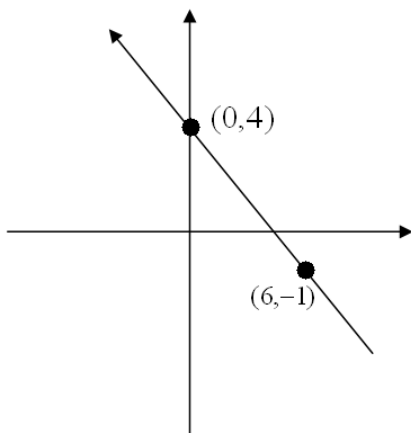
B: $(-1, -6)$

C: $(1, -50)$

D: $(1, 1)$

E: $(4, 1)$

Question 34

The equation of this graph is:

A: $y = -\dfrac{6x}{5} + 4$
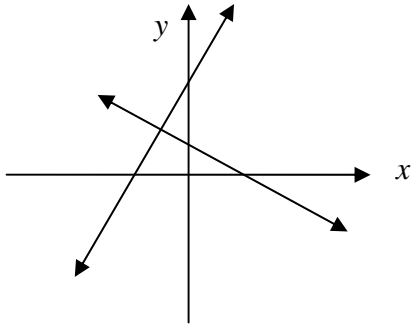
B: $y = \dfrac{5x}{6} + 4$

C: $y = 5x + 4$

D: $y = -\dfrac{5x}{6} + 4$

E: $y = \dfrac{-5x}{6} - 4$

Question 35

The coordinates of the point of intersection for the two graphs could only be:

A: $(-1, 2)$

B: $(-1, -2)$

C: $(1, 2)$

D: $(1, -2)$

E: $(2, -1)$

Question 36

$-(-3)^3 =$

    A: - 9   **B**: 27   **C**: 9   **D**: -27   **E**: None of these

Question 37

$\dfrac{10x^2}{4y} \times \dfrac{8y^3}{5x} =$

    A: $4x^2 y$ **B**: $\dfrac{2y}{x}$ **C**: $\dfrac{2xy^5}{xy}$ **D**: $4xy^2$ **E**: None of these

Question 38

$(3° y)^2 \times 2(xy)° =$

    A: $18y^2$ **B**: $36xy^3$ **C**: $2y^2$ **D**: $6xy^2$ **E**: None of these

Question 39

$\dfrac{3x^{-2}y^2}{6y^{-1}x^3} =$

    A: $\dfrac{y^3}{2x^5}$ **B**: $\dfrac{y}{2x}$ **C**: $\dfrac{y}{3x}$ **D**: $\dfrac{3y}{x^5}$ **E** $\dfrac{2y^3}{x}$

Question 40

Which is not the same as $32^{3/5}$?

    A: $\left(32^{1/5}\right)^3$ **B**: $\left(32^3\right)^{1/5}$ **C**: $\left(\sqrt[5]{32}\right)^3$ **D**: $\left(32^{1/3}\right)^5$ **E**: $\sqrt[5]{32^3}$

Use the Venn diagram to answer questions 41, 42 and 43
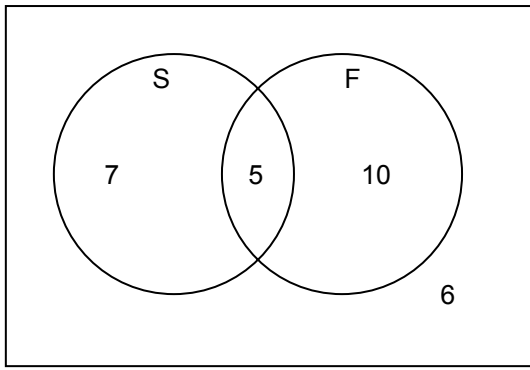
The diagram shows a class of music students and instruments they learn.

S = Saxophone
F = Flute

Question 41

What is the total number of students in the class?

A: 33   **B**: 22   **C**: 17   **D**: 23   **E**: 28

Question 42

How many students learnt neither saxophone nor flute?

A: 5   **B**: 6   **C**: 7   **D**: 10   **E**: None of these

Question 43

How many students learnt just the saxophone or the flute?

A: 12   **B**: 22   **C**: 17   **D**: 15   **E**: None of these

Question 44

Which is the best cumulative frequency graph for the histogram?
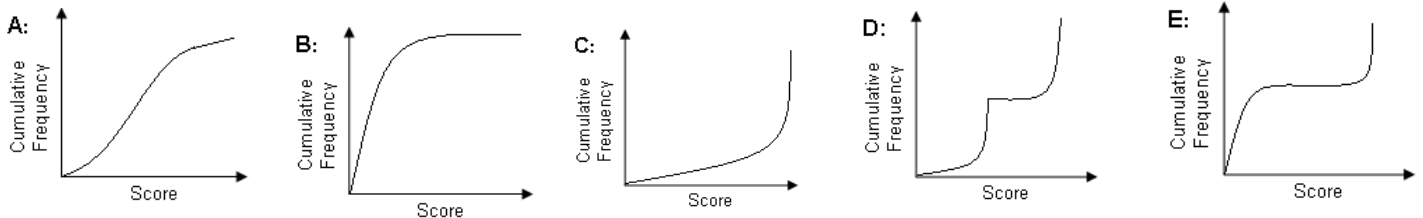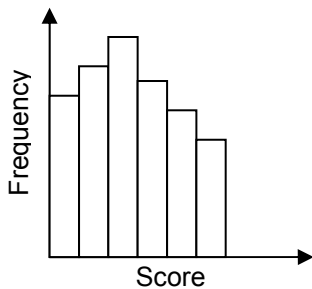
Question 45

Jack's Dad invested some money and for every $12 he invested he got a total of $15 back. If Jack's Dad invested $300, how much in total did he get back?

A: $225   **B**: $525   **C**: $480   **D**: $375   **E**: None of these

Question 46

Expand the brackets and simplify

$\left(2\sqrt{5} - \sqrt{2}\right)^2$

    A: $4\sqrt{5} + 2\sqrt{2}$ **B**: $12 - 4\sqrt{10}$ **C**: $8 - 4\sqrt{10}$ **D**: $2\sqrt{10} - 2$ **E**: None of these

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Question 47

Rationalise and simplify $\dfrac{4\sqrt{5}}{\sqrt{3}}$

A: $\sqrt{2}$ **B**: $3\sqrt{6}$ **C**: $\sqrt{6}$ **D**: $\dfrac{\sqrt{6}}{3}$ **E**: None of these

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Question 48

If $x = \frac{1}{2}$ $y = \frac{2}{3}$ and $z = \frac{3}{4}$ evaluate

$x \div y + z$

    A: $1\dfrac{1}{2}$ **B**: $\dfrac{3}{7}$ **C**: $1\dfrac{1}{12}$ **D**: $\dfrac{3}{4}$ **E**: None of these

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Question 49

Expand and simplify

$(3a - 5b)(3a + 5b)$

    A: $9a - 25b$ **B**: $9a + 25b$ **C**: $9a^2 + 25b^2$ **D**: $9a^2 - 25b^2$ **E**: None of these

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Question 50

Factorise and simplify

$3a^2 + 3a - 18$

    A: $(a + 3)(a - 2)$ **B**: $3(a - 3)(a + 2)$ **C**: $3(a - 3)(a - 2)$ **D**: $3(a + 3)(a - 2)$ **E**: None of these

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Question 51

Simplify $\dfrac{x^2 - 9}{4x - 12} \div \dfrac{x + 3}{2}$

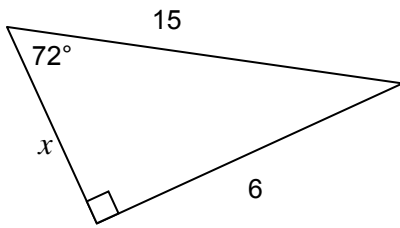   **A**: $\dfrac{x + 3}{4}$ **B**: $\dfrac{1}{2}$ **C**: $\dfrac{x + 3}{2(x - 3)}$ **D**: $\dfrac{2}{1}$ **E**: None of these
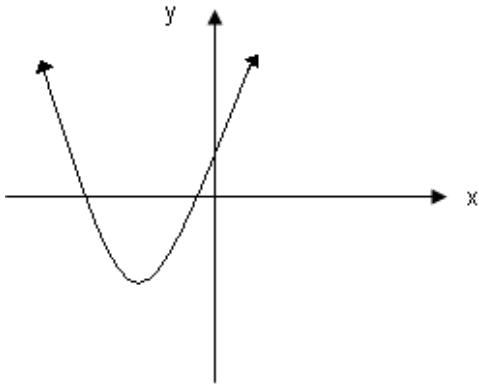

Question 52

The correct ratio to find x is:

```
        15
  72° _____
 /          \
x\           \
  _____\
   |       6
```

A: 6 Cos 72°   **B**: 6 Tan 72°   **C**: 15 Sin 18°   **D**: 15 Sin 72°   **E**: 15 Cos 18°

Question 53

The turning point of the graph could only be:

A: $(-3,3)$ **B**: $(4,-2)$ **C**: $(3,4)$ **D**: $(-2,3)$ **E**: $(-3,-2)$

Question 54

A number x is subtracted from two times its square and the result is 45. An equation to find the value of x would be:

A: $x^2 - 2x = 45$ **B**: $2x - x^2 = 45$ **C**: $2x^2 - x = 45$ **D**: $2x^2 - 2x = 45$ **E**: $x - 2x^2 = 45$
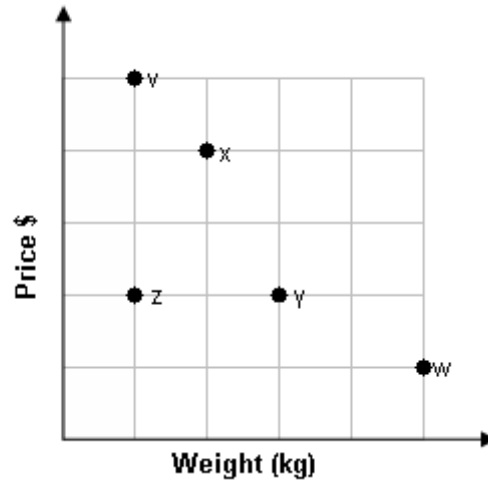
Question 55

Find the points of intersection of the graphs of $y = x^2$ and $y = 3x - 2$.

A: $(1,1)(1,4)$ **B**: $(2,4)(1,1)$ **C**: $(1,-1)(2,4)$ **D**: $(-2,4)(1,1)$ **E**: None of these

The graph shows the price paid and weight for bags of sugar bought at different shops.

Question 56

Which shop gave the worst value for money?

A: Shop z   **B**: Shop y   **C**: Shop x   **D**: Shop w   **E**: Shop v

Question 57

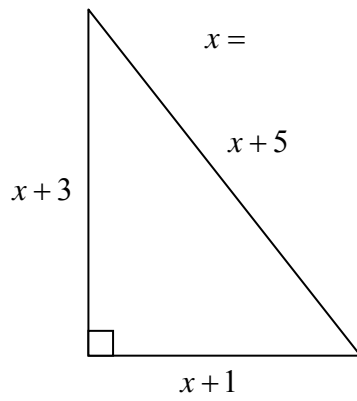Which two shops charged the same price per kilogram?

A: Shops z & x   **B**: Shops z & v   **C**: Shops y & z   **D**: Shops v & w   **E**: Shops x & y

Question 58

At which shop would you get three times the amount of sugar for the same price as shop z?

A: Shop v   **B**: Shop x   **C**: Shop w   **D**: Shop y   **E**: None of these

Question 59

$x =$

$x + 5$

$x + 3$

$x + 1$

A: 4   **B**: 5   **C**: 6   **D**: 3   **E**: None of these

Question 60

Factorise $ab + b^2 - ac - bc$

A: $(b - c)(a - c)$ **B**: $(b + a)(b + c)$ **C**: $(b - c)(a - c)$ **D**: $(b + c)(a - b)$ **E**: None of these

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WELL DONE. THIS IS THE END OF THE TEST.

IF YOU STILL HAVE TIME LEFT, PLEASE CHECK OVER YOUR ANSWERS.