

MATHEMATICS PRACTICE TEST

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

48⑦9

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

A: 4879

B: 700

C: 70

D: 7

E: None of these

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

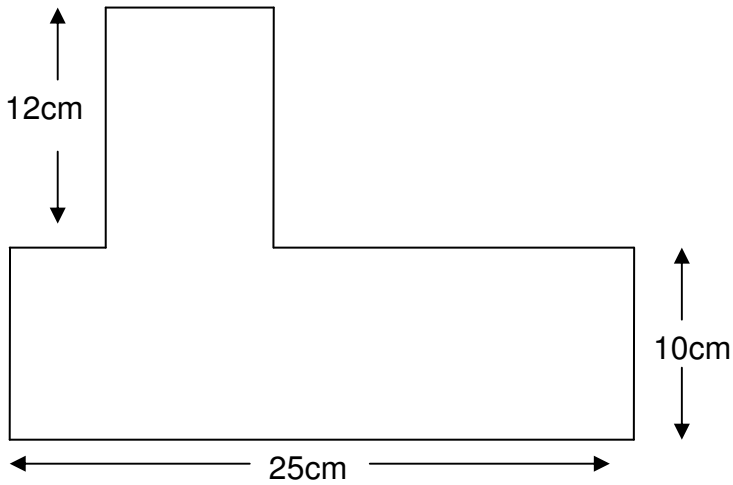
Question 6

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

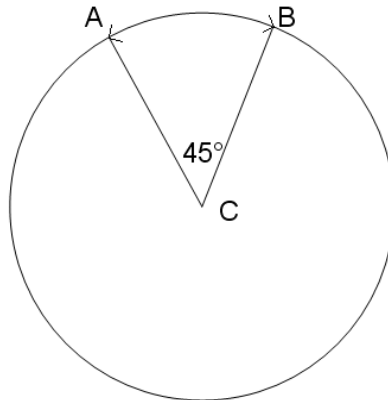
C: 69cm

D: 94cm

E: Not enough information to find perimeter

Question 8

If the length of the shorter arc \overline{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

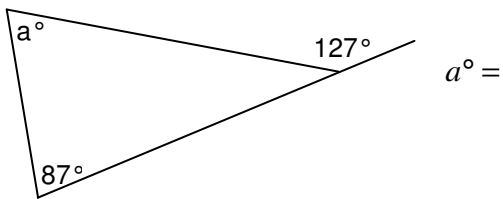
E: None of these

Question 10

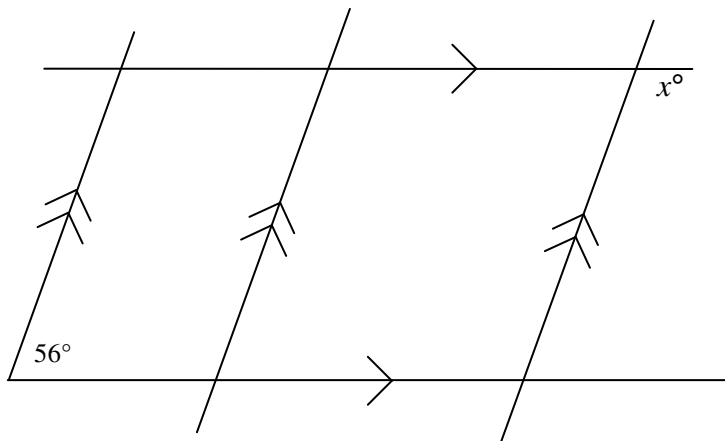
If $2\frac{1}{3} : 4\frac{1}{3}$ then $7 : \square = \square$

A: 12**B:** 13**C:** $8\frac{2}{3}$ **D:** $6\frac{1}{3}$ **E:** None of these**Question 11**

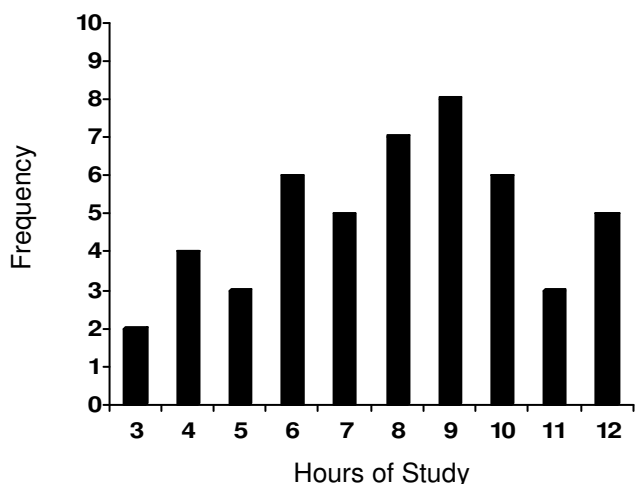
Concrete is made by mixing screenings cement and sand in the ratio 3:1:15. How much sand would be needed to make 125 tonnes of concrete?

A: 27 tonnes**B:** 33.75 tonnes**C:** 45 tonnes**D:** 75 tonnes**E:** None of these**Question 12****A:** 53**B:** 40**C:** 93**D:** 146**E:** None of these**Question 13**

$x^\circ =$

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

Use the following graph to answer questions 14 and 15



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
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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
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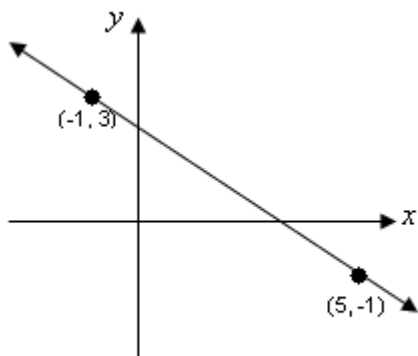
Question 16

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

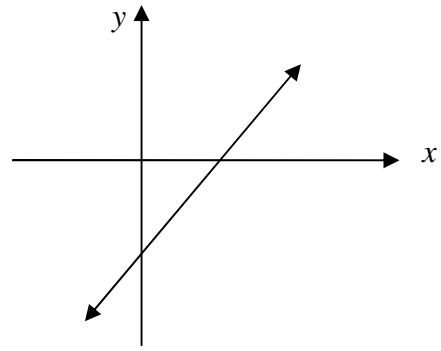
The gradient of the line is



- 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: $7 - 12x$

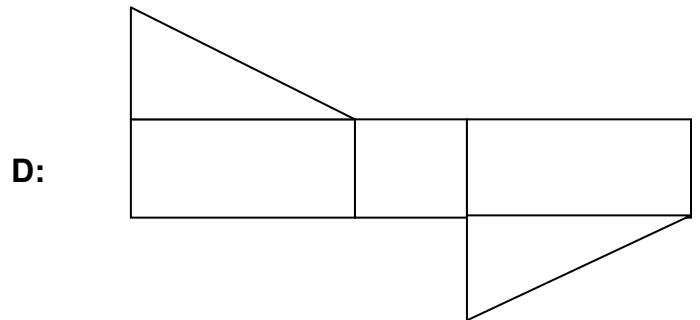
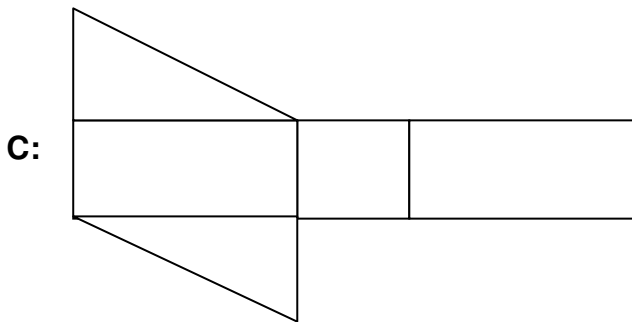
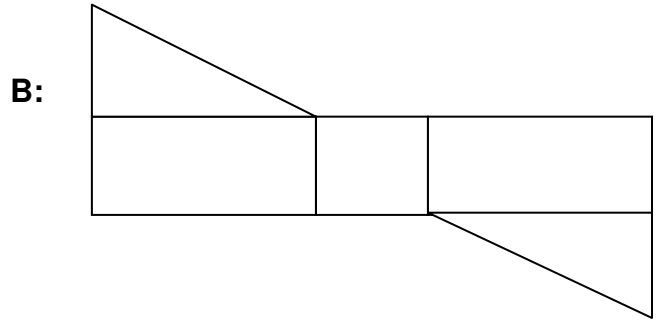
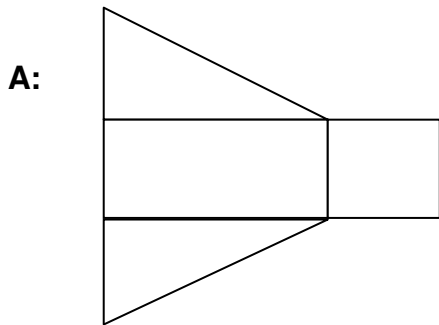
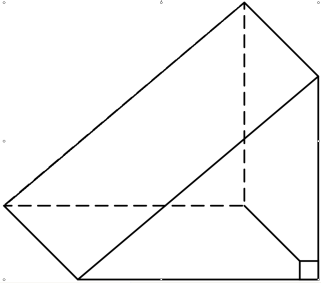
C: $12x - 7$

D: $7 + 12x$

E: None of these

Question 21

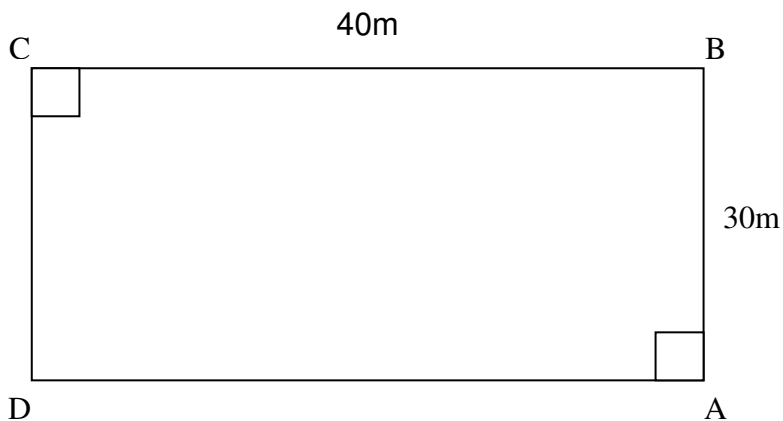
Which option would make this solid?



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

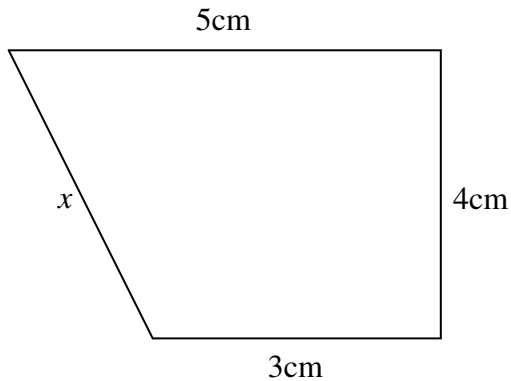
Question 23Simplify the surd $3\sqrt{56}$ completely

A: $12\sqrt{14}$

B: $5\sqrt{14}$

C: $6\sqrt{14}$

D: $6\sqrt{28}$

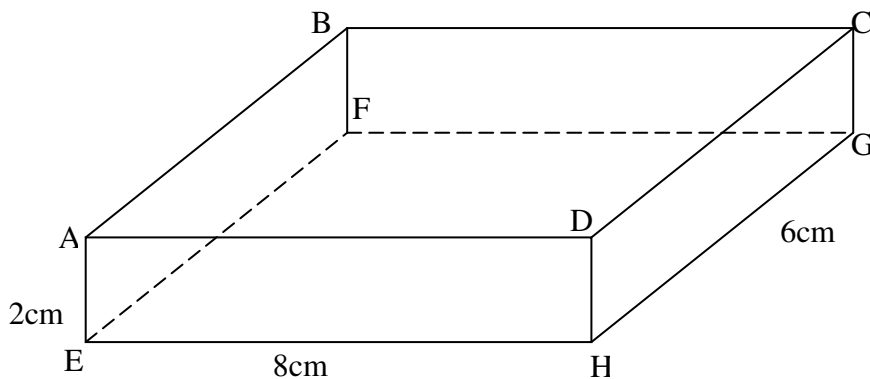
E: None of these**Question 24**The length of x equals

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} ?

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 $\frac{2}{7}$. What is the new value of the car?

A: \$2200

B: \$5500

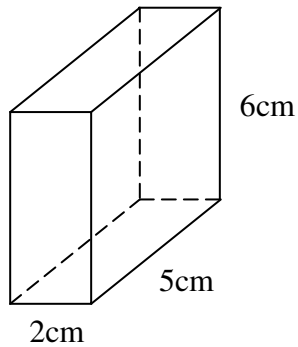
C: \$9900

D: \$4400

E: None of these

Question 27

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



- 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 $R = \frac{(S+T)P}{3}$ then T equals

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

Question 30

Solve the inequation for x

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

- A:** $x < 3$
- B:** $x > 3$
- C:** $x > -3$
- D:** $x > 1\frac{4}{5}$
- E:** None of these

Question 31

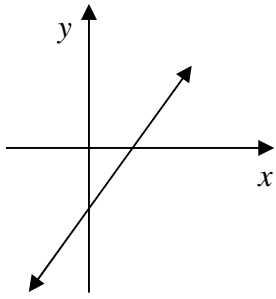
Solve for x

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

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

Question 32

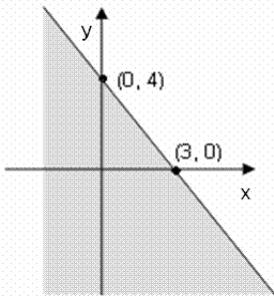
Which equation could only be the equation of the graph?



- A:** $y = 3x + 2$
- B:** $y = -3x - 2$
- C:** $y = 3x - 2$
- D:** $y = -3 + 2$
- E:** $y = -x - 2$

Question 33

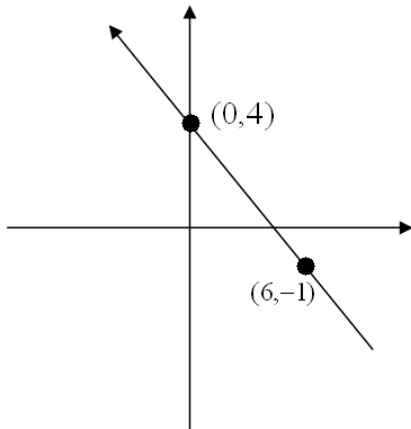
Which set of coordinates lie outside the shaded area?



- A:** (0,0)
- B:** (-1,-6)
- C:** (1,-50)
- D:** (1,1)
- E:** (4,1)

Question 34

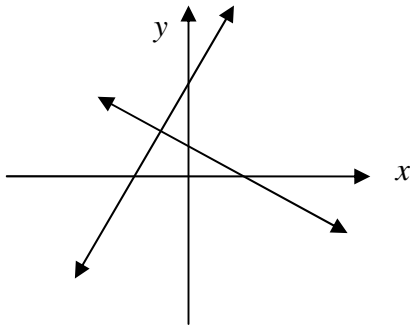
The equation of this graph is:



- A:** $y = -\frac{6x}{5} + 4$
- B:** $y = \frac{5x}{6} + 4$
- C:** $y = 5x + 4$
- D:** $y = -\frac{5x}{6} + 4$
- E:** $y = \frac{-5x}{6} - 4$

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**

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

A: $4x^2y$

B: $\frac{2y}{x}$

C: $\frac{2xy^5}{xy}$

D: $4xy^2$

E: None of these**Question 38**

$$(3^{\circ}y)^2 \times 2(xy)^{\circ}$$

A: $18y^2$

B: $36xy^3$

C: $2y^2$

D: $6xy^2$

E: None of these**Question 39**

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

A: $\frac{y^3}{2x^5}$

B: $\frac{y}{2x}$

C: $\frac{y}{3x}$

D: $\frac{3y}{x^5}$

E: $\frac{2y^3}{x}$

Question 40

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

A: $(32^{1/5})^3$

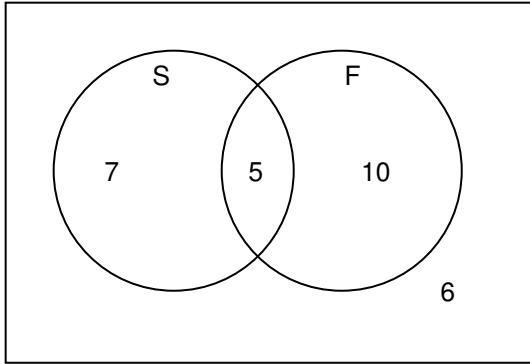
B: $(32^3)^{1/5}$

C: $(\sqrt[5]{32})^3$

D: $(32^{1/3})^5$

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

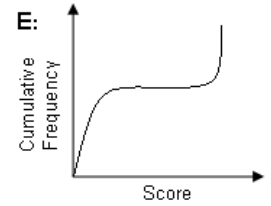
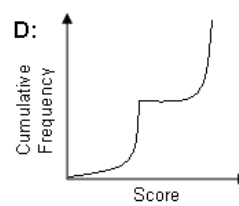
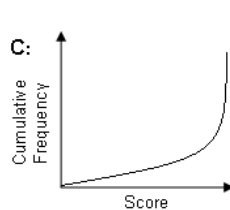
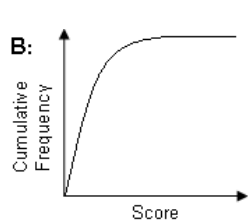
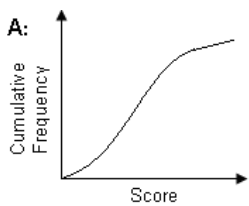
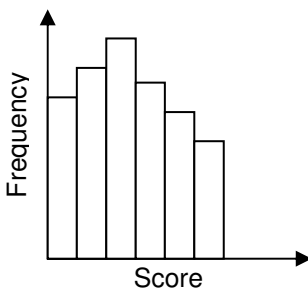
Question 43

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

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

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

Question 47Rationalise and simplify $\frac{4\sqrt{5}}{\sqrt{3}}$

A: $\sqrt{2}$

B: $3\sqrt{6}$

C: $\sqrt{6}$

D: $\frac{\sqrt{6}}{3}$

E: None of these

Question 48If $x = \frac{1}{2}$, $y = \frac{2}{3}$ and $z = \frac{3}{4}$ evaluate

$x \div y + z$

A: $1\frac{1}{2}$

B: $\frac{3}{7}$

C: $1\frac{1}{12}$

D: $\frac{3}{4}$

E: None of these

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

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

Question 51Simplify $\frac{x^2 - 9}{4x - 12} \div \frac{x + 3}{2}$

A: $\frac{x + 3}{4}$

B: $\frac{1}{2}$

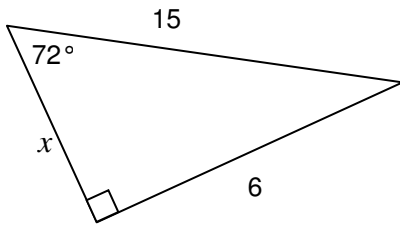
C: $\frac{x + 3}{2(x - 3)}$

D: $\frac{2}{1}$

E: None of these

Question 52

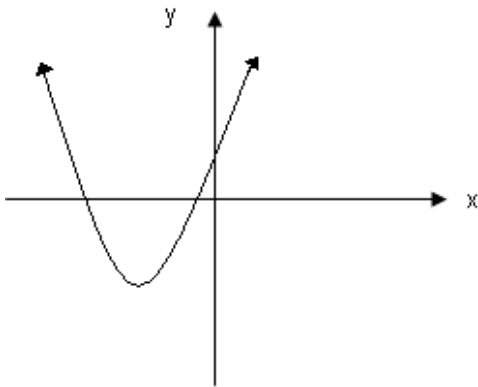
The correct ratio to find x is:



- A:** $6 \cos 72^\circ$ **B:** $6 \tan 72^\circ$ **C:** $15 \sin 18^\circ$ **D:** $15 \sin 72^\circ$ **E:** $15 \cos 18^\circ$
-

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:** $x - 2x^2 = 45$
-

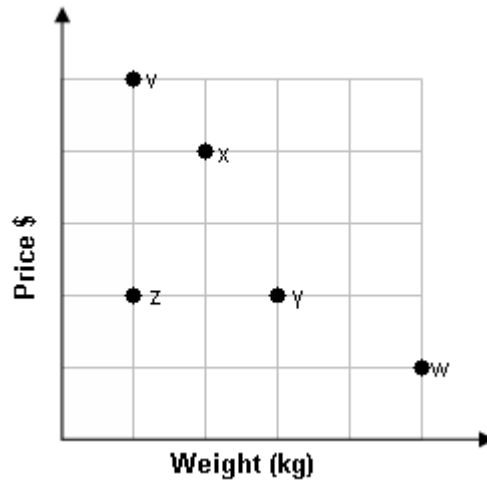
Question 55

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
-

Use the graph to answer questions 56, 57 & 58

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?

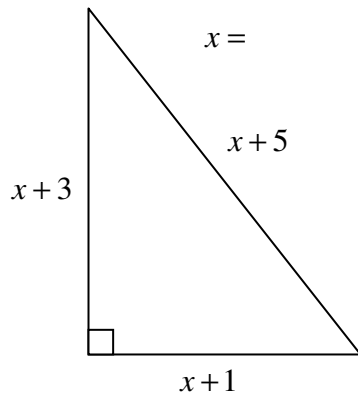
- A:** Shops z & x **B:** Shops z & v **C:** Shops y & z **D:** Shops v & w **E:** Shops x & y
-

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



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: $(b-c)(a+b)$

D: $(b+c)(a-b)$

E: $(b-c)(a+c)$

WELL DONE. THIS IS THE END OF THE TEST.

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