

**Write the written number in numerals.**

- a six million, thirty-eight thousand and two \_\_\_\_\_
- b nine million, one hundred thousand and fifty-five \_\_\_\_\_
- c three million, five hundred and seventy-seven thousand and eleven \_\_\_\_\_
- d five million, eight hundred and one thousand, three hundred and sixty \_\_\_\_\_
- e nine million, nine hundred and ninety-nine thousand, nine hundred and nine \_\_\_\_\_

**What number needs to go in the box?**

- a  $2678450 = 2000000 + 600000 + \underline{\hspace{2cm}} + 8000 + 400 + 50 + 0$
- b  $8878676 = 8000000 + 800000 + 70000 + \underline{\hspace{2cm}} + 600 + 70 + 6$
- c  $3585732 = \underline{\hspace{2cm}} + 500000 + 80000 + 5000 + 700 + 30 + 2$
- d  $9999999 = 9000000 + 900000 + \underline{\hspace{2cm}} + 9000 + 900 + 90 + 9$
- e  $1213141 = 1000000 + 200000 + 10000 + 3000 + \underline{\hspace{2cm}} + 40 + 1$

**Write these numbers as words.**

- a 4323675 \_\_\_\_\_
- b 308004 \_\_\_\_\_
- c 7004399 \_\_\_\_\_

**Put these numbers in order, largest first.**

- a 100100      110011      100001      1000000      11011

\_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_

**5. Add the correct 'more than' (>) or 'less than' (<) sign.**

- a 56438  56348    b 156839  165893    c 33765  33675
- d 58375  58377    e 9867563  9876562    f 776777  776677

**How many more is ...**

a 567342 than 566342? \_\_\_\_\_    b 1765877 than 1765876? \_\_\_\_\_

c 787865 than 787665? \_\_\_\_\_    d 6574328 than 6374328? \_\_\_\_\_

**Write the number or numbers each of these whole numbers are divisible by.**

- a 555 \_\_\_\_\_    b 356 \_\_\_\_\_
- c 405 \_\_\_\_\_    d 1010 \_\_\_\_\_
- e 168 \_\_\_\_\_    f 237 \_\_\_\_\_
- g 356 \_\_\_\_\_    h 264 \_\_\_\_\_
- i 2545 \_\_\_\_\_    j 6624 \_\_\_\_\_

**How would you know whether a whole number is divisible by 25?**

Write your own rule.

---

There are 297 children at East School. 139 are girls.

How many boys are there at East School?

ANSWER: \_\_\_\_\_

2) Which of the following is most likely to be the weight of a bag of sugar?

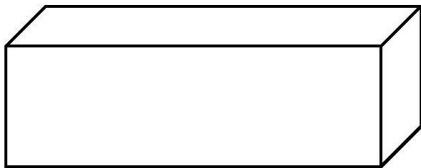
- A 10 kg
- B 1 kg
- C 100 kg
- D 1 litre
- E 1 mm

3) What value does the digit 4 represent in 123.45?

- A 4 hundreds
- B 4 thousands
- C 4 tenths
- D 4 hundredths
- E 4 units

4) What is this shape called?

- A Cylinder
- B Cuboid
- C Tube
- D Cube
- E Rectangle



John and Tim share 245 sweets in the ratio of 2 to 5.

How many sweets does Tim receive?

ANSWER: \_\_\_\_\_

John and Tim share 245 sweets in the ratio of 2 to 5.

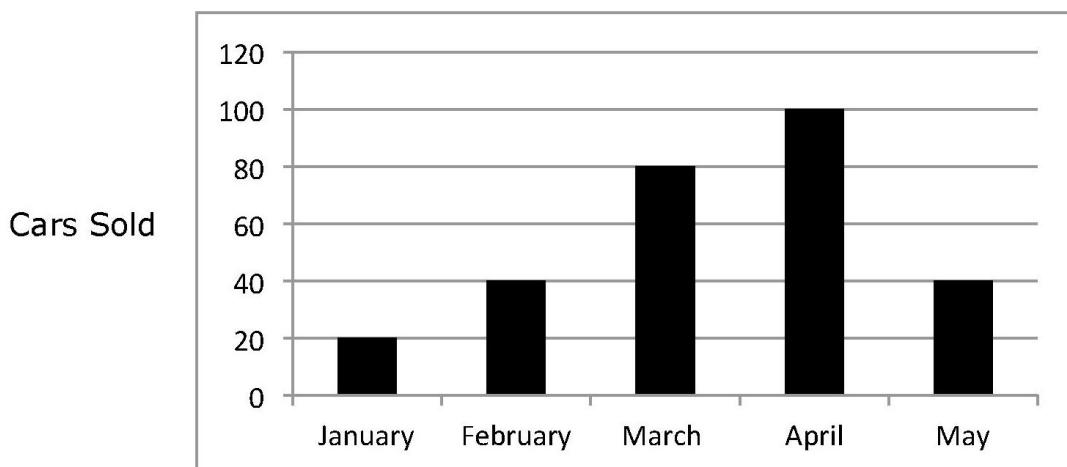
How many sweets does Tim receive?

ANSWER: \_\_\_\_\_

6) 26 children decided to raise money for charity. The average amount raised by each child was £31. How much money did they raise in total?

- A £758
- B £806
- C £1.19
- D £248
- E £57

This chart shows the number of cars sold each month by 'Tony's Car Shop'. How many more cars were sold in April than in February?



ANSWER: \_\_\_\_\_

8) Which of these words has a horizontal line of symmetry?

- A YUP
- B HUH
- C DEP
- D VQA
- E HIO

9) A zoo has 39 monkeys. Two-thirds of the monkeys are brown.  
How many monkeys are not brown?

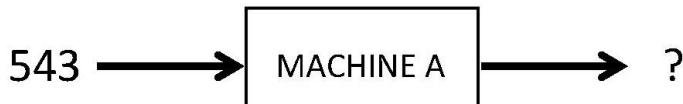
- A 13
- B 10
- C 39
- D 26
- E 0

10) A rectangle has an area of  $72 \text{ cm}^2$ .  
Its length is 9 cm. What is the perimeter of the rectangle?

- A** 8 cm
- B** 18 cm
- C** 27 cm
- D** 34 cm
- E** 16 cm

11) How many thirds are there in 27?

- A** 9
- B** 3
- C** 27
- D** 81
- E** 54



Machine A subtracts 8 and then divides by 5.  
Which number comes out?

ANSWER: \_\_\_\_\_

13) Write the number 7.4558 to two decimal places.

- A** 7.45
- B** 7.50
- C** 7.47
- D** 7.40
- E** 7.46

- 14) Seven years ago, Tim was  $x$  years old.  
How old will Tim be in three years' time?

- A**  $x + 10$
- B**  $x + 3$
- C**  $x + 7$
- D**  $x - 10$
- E**  $x - 3$

- 15) All the students in West School are going on a school trip by coach.  
There are 230 boys and 115 girls at West School.  
Each coach holds 25 people.  
How many coaches are needed to transport all the students?

ANSWER: \_\_\_\_\_

- 16) How many edges does a sphere have?

- A** 3
- B** 5
- C** 0
- D** 2
- E** 8

- 17) A camel ate  $\frac{5}{8}$  of a pile of nuts. If there were 42 nuts left, how many did the camel eat?

- A** 70
- B** 112
- C** 42
- D** 50
- E** 14

This table shows the total sales made by three employees at a company.

	Dawn	Amy	Rob
November	£450	£543	£333
December	£123	£765	£893
January	£654	£820	£422

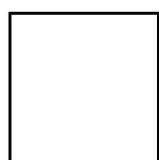
How much more was Dawn's January sale total than Rob's November sale total?

ANSWER: \_\_\_\_\_

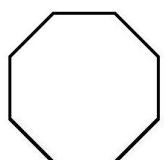
19) Which number is a factor of 56 and a multiple of 7?

- A** 21
- B** 8
- C** 27
- D** 35
- E** 14

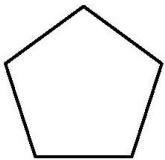
20) Which of these shapes does not have rotational symmetry?



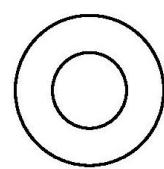
**A**



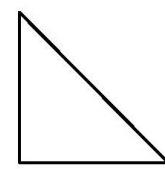
**B**



**C**

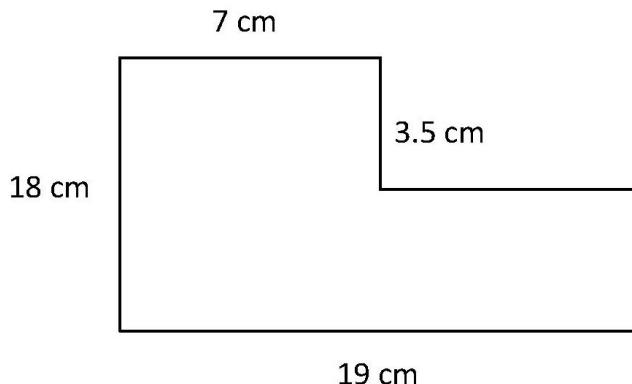


**D**



**E**

21) What is the perimeter of this shape?



NOT DRAWN TO SCALE

ANSWER: \_\_\_\_\_

22) Tickets for the fair cost £3.50 for adults and £1.25 for children. If you buy two adult tickets, you get a child ticket for free.

How much does it cost for Mr. and Mrs. Jones and their two children to go to the fair?

ANSWER: \_\_\_\_\_

I think of a number, multiply it by 7, subtract 2 and then divide it by 9. The result is 6. What number did I think of?

ANSWER: \_\_\_\_\_

24) John buys a new computer. He receives a 15% discount off the original price. If the original price of the computer was £570, how much did John pay?

- A** £85.50
- B** £655.50
- C** £484.50
- D** £500
- E** £513

25) What is the mode of the set of numbers below?

7   4   13   8   9   4   1   19   87   54   13   3   45   54   87   13   43   76   12   90   1

- A 13
- B 15
- C 54
- D 1
- E More information needed

26)  $5g + 7y - 3z = p$

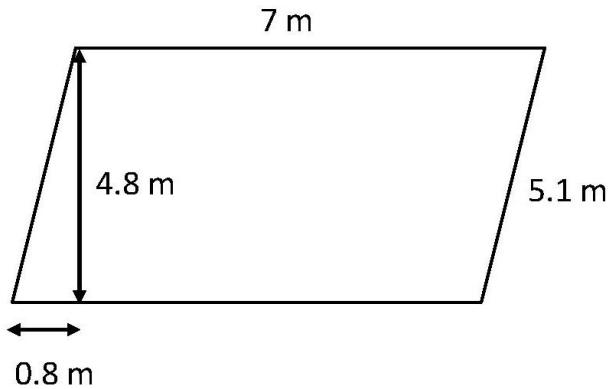
If  $y = 12$ ,  $z = 4$  and  $g = 2$ , what is  $p$ ?

ANSWER: \_\_\_\_\_

27) What number is 37 less than the number indicated by the arrow on this number line?



- A 180
- B 175
- C 217
- D 145
- E 143



What is the area of this parallelogram?

ANSWER: \_\_\_\_\_

- 29) In a class of 30 students, 17 wear glasses and 22 have brown hair.

What is the smallest possible number of students who don't wear glasses but do have brown hair?

- A 13
- B 8
- C 5
- D 0
- E 30

- 30) The attendance of a football match was 34,500 rounded to the nearest 500. What is the difference between the largest and smallest possible attendances?

ANSWER: \_\_\_\_\_

- 31) 10 squirrels each have  $x$  cashew nuts and  $y$  peanuts.

What is the total number of nuts that the 10 squirrels own?

- A  $10x + 10$
- B  $10(x - y)$
- C  $10 + x + y$
- D  $10(x + y)$
- E  $x + y$

32) Which of these numbers is the smallest?

- A 0.808
- B 0.8081
- C 0.8079
- D 0.8088
- E 0.8087

33) I have a set of marbles. 7 are blue, 6 are red, 7 are green and 4 are yellow.

If I pick one marble at random, in which one of the following are **both** statements true?

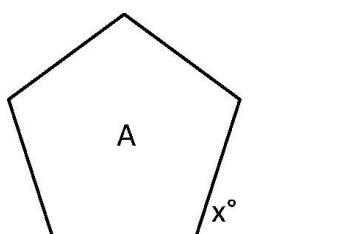
- A I have an even chance of picking a red marble.  
I have a less than even chance of picking a green marble.
- B I have greater than even chance of picking a marble that is not blue.  
I have a less than even chance of picking a marble that is orange.
- C I have a less than even chance of picking a green marble.  
I have an even chance of picking a blue or red marble.
- D I have no chance of picking a pink marble.  
I have an even chance of picking a yellow marble.
- E I have a less than even chance of picking a green or yellow marble.  
I have a greater than even chance of picking a red marble.

34)  $6^4 = ?$

- A  $6 \times 6 \times 6$
- B  $4 \times 4 \times 4 \times 4 \times 4 \times 4$
- C  $6 \times 6 \times 6 \times 6$
- D  $6 \times 4$
- E  $4 \times 4 \times 4 \times 4$

35) Shape A is a regular pentagon.

What is the measure of the angle marked  $x$ ?



ANSWER: \_\_\_\_\_

What is the next number in this sequence?

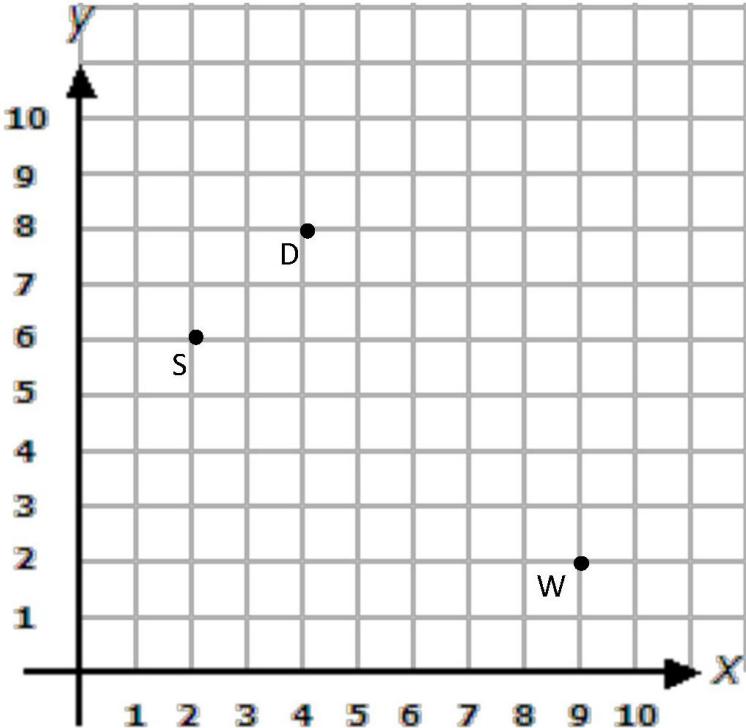
36    37    41    50    66

ANSWER: \_\_\_\_\_

37) Which one of these calculations gives the answer 16?

- A  $\frac{1}{2}$  of 33
- B 25% of 70
- C 0.3 of 30
- D  $\frac{1}{6}$  of 96
- E  $\frac{3}{4}$  of 20

38)



What are the coordinates of S, D and W?

- A S (6,2)   D (4,8)   W (9,2)
- B S (2,6)   D (8,4)   W (9,2)
- C S (2,6)   D (4,8)   W (9,2)
- D S (2,6)   D (4,8)   W (2,9)
- E S (6,2)   D (8,4)   W (2,9)

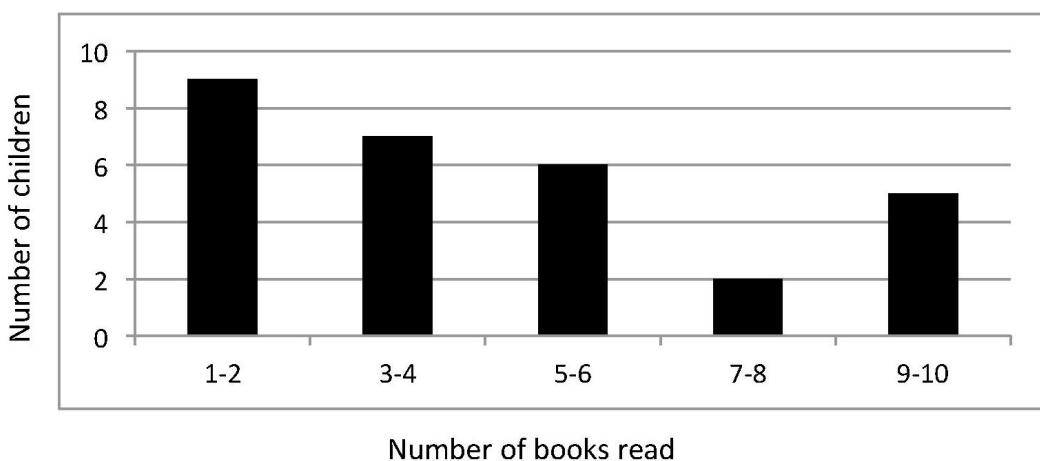
39) I draw a shape. It has exactly 2 pairs of parallel sides and exactly 2 lines of symmetry.  
Which shape could I have drawn?

- A Square
- B Circle
- C Trapezium
- D Rectangle
- E Parallelogram

40) A map is drawn on a scale of 1:600,000.  
What real distance is represented by 1 cm on the map?

- A 6,000 km
- B 0.6 km
- C 60 km
- D 600 km
- E 6 km

41) This chart shows the number of books read by some children during the holidays.



How many children read less than 7 books?

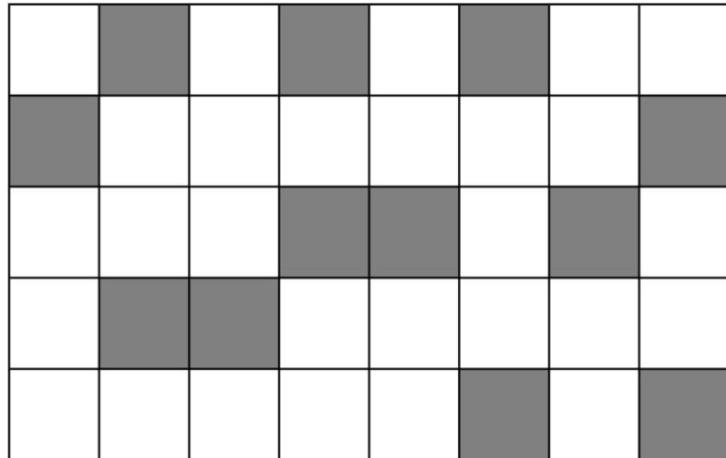
ANSWER: \_\_\_\_\_

42) An isosceles triangle has angles F, G and B.  
Angle B measures  $70^\circ$ .  
Angle G measures  $40^\circ$ .  
What is the size of angle F?

ANSWER: \_\_\_\_\_

43) Which of the following is true?

- A  $7.8 \times 10 > 78$
- B  $4.3 \div 10 > 0.43$
- C  $65 > 650 \div 100$
- D  $87 \times 10 = 871$
- E  $13 \times 10 < 129$



Each of these grey and white tiles measures  $75\text{ cm} \times 75\text{ cm}$ .  
What is the total area covered in grey tiles, in square metres?

ANSWER: \_\_\_\_\_

45)  $(13 \times 15) - 18 = 177$

Which of the following is correct?

- A  $177 - 18 = 13 \times 15$
- B  $177 - 13 = 18 \times 15$
- C  $177 \div (13 \times 15) = 18$
- D  $18 = (13 \times 15) - 177$
- E  $15 - 18 - 13 = 177$

46) How many more edges than faces does a cube have?

ANSWER: \_\_\_\_\_

47) Ben is 1.85 m tall, Clare is 1.49 m tall and Diane is 123 cm tall.

What is the range of their heights in centimetres?

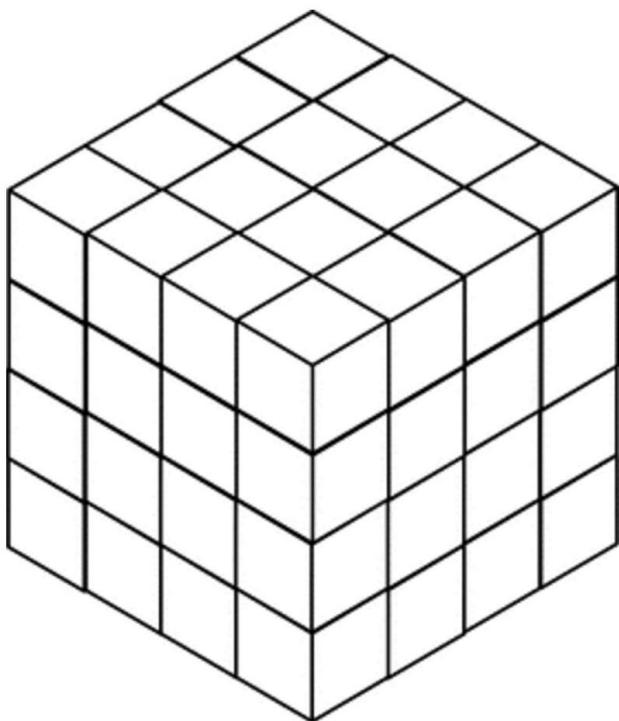
ANSWER: \_\_\_\_\_

48) The base of a triangle is 8 cm and the height is 7 cm.

What happens to the area of the triangle if I double both the base and the height?

- A** The area doubles.
- B** The area halves.
- C** The area quadruples.
- D** The area triples.
- E** The area stays the same.

Below is a diagram of a large cube made from small, identical cubes.  
If I paint the outside of the shape red, how many of the small cubes will have exactly two faces painted red?



ANSWER: \_\_\_\_\_

John works as a machine salesman. He earns £350 per week plus 15% of the price of every machine he sells. Machines are priced at £30 each.

If John sells 20 machines every day, how much money does he earn in a fortnight?

ANSWER: \_\_\_\_\_

- 1) Thirty-two million, four hundred and fifty thousand and twenty-two.  
What is this number in digits?

- A 3,245,022
- B 32,450,022
- C 32,000,220
- D 30,450,022
- E 32,405,022

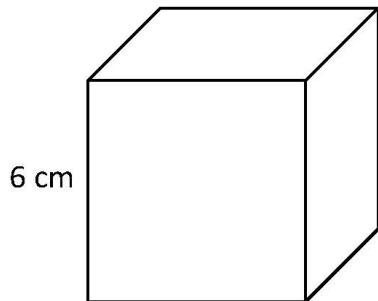
- 2) Which of these groups of letters does not have a vertical line of symmetry?

- A HTYYTH
- B TIIT
- C UIOIIIOIU
- D AXUIUAX
- E UUTTTTUU

- 3) A crate holds 27 bananas. How many crates are needed to hold 345 bananas?

ANSWER: \_\_\_\_\_

- 4) A cube has a height of 6 cm.  
What is the volume of the cube?



ANSWER: \_\_\_\_\_

- 5) The table below shows the population of men and women in a town. It also shows what percentage of the population voted in a recent election.

	Population	Voted
Women	12,000	55%
Men	13,000	25%

How many more women voted than men?

- A 3,350
- B 12,000
- C 3,250
- D 13,000
- E 6,600

Below is a diagram of a plot of land drawn using the scale 1 cm to 6 m.  
What is the area of the plot of land in  $m^2$ ?



ANSWER: \_\_\_\_\_

- 7) What is the time 7 minutes after midnight?

- A 12.07 pm
- B 00.07
- C 7.12 am
- D 24.07
- E 23.07

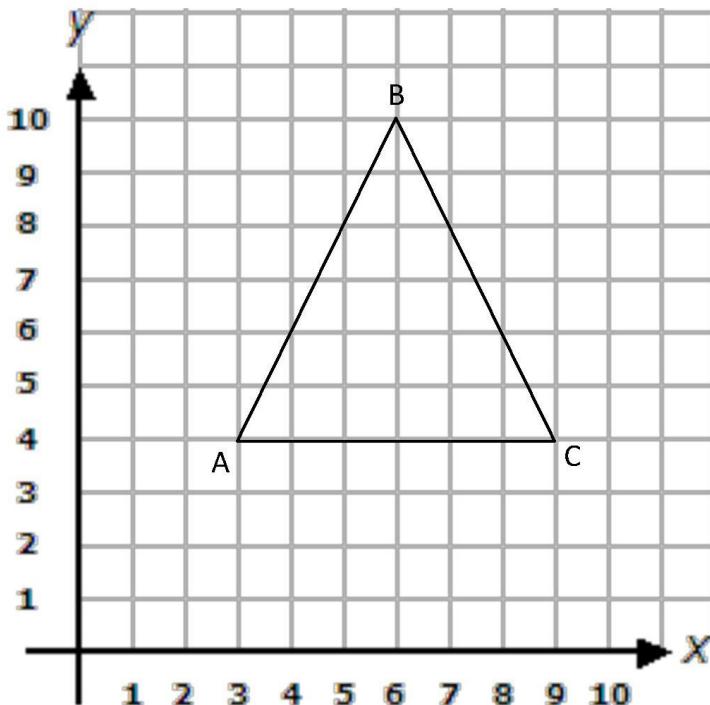
8) If  $y + u = 7$ , what is the value of  $y + u - 4$ ?

- A 7
- B 11
- C 4
- D 3
- E More information needed

9) The numerator of a certain fraction is 4 less than the denominator. If the fraction is equivalent to  $\frac{4}{5}$ , what is the denominator of this fraction?

- A 20
- B 8
- C 10
- D 12
- E 25

10)



Each unit on the graph above is equivalent to 1 cm.

What is the area of triangle ABC?

ANSWER: \_\_\_\_\_

- 11) 5 friends are planning to go on a 4-day holiday. Each of them requires 1 bottle of water for each day of the trip. If bottles of water are only available in packs of 3, how many packs of water must they buy?

- A** 60
- B** 6
- C** 5
- D** 20
- E** 7

12)

Number of cookies	Cost
1 cookie	59 p
Box of 6 cookies	£3.10
Box of 12 cookies	£6.00

The table above shows the price of cookies at the local market. Ben buys 22 cookies using the least amount of money possible. How much does Ben pay?

ANSWER: \_\_\_\_\_

13) Alice, Beth, Catherine and Daisy all ran a race.

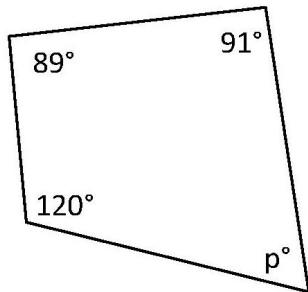
Their mean time was 54 seconds. Alice's time was 52 seconds. Beth's time was 5 seconds slower than Alice's. Catherine's time was 7 seconds faster than Beth's. What was Daisy's time?

- A 52 seconds
- B 48 seconds
- C 59 seconds
- D 57 seconds
- E 55 seconds

14) There are 32 litres of water in a container. If I pour out 200 ml per minute, how long will it take me to empty the container.

- A  $2\frac{3}{4}$  hours
- B  $3\frac{1}{4}$  hours
- C  $2\frac{3}{5}$  hours
- D  $1\frac{7}{8}$  hours
- E  $2\frac{5}{6}$  hours

15) What is the measure of angle  $p$  in the shape below?



ANSWER: \_\_\_\_\_

16) If all the men in the Gower family are over 2 m tall, which of the following **must** be true?

- A Some women in the Gower family are over 2 m tall.
- B No man in the Gower family is less than 200 cm tall.
- C No men in the Gower family are less than 210 cm tall.
- D All the men in the Gower family have brown hair.
- E The Gower family consists of three men and two women.

17) Sam is older than Gill but younger than Harry. If the letters  $s$ ,  $g$ , and  $h$  represent the ages of Sam, Gill and Harry, which of the following is true?

- A  $s < g < h$
- B  $g < h < s$
- C  $h < s < g$
- D  $s < h < g$
- E  $g < s < h$

What is the greatest three-digit number that is also a multiple of 10?

ANSWER: \_\_\_\_\_

19) The following cake recipe serves 5 people. How much butter do I require if I wish to adapt the recipe to serve 11 people?

Recipe
4 eggs
300 g flour
150 g sugar
90 g butter

- A** 1 kg
- B** 0.4 kg
- C** 198 g
- D** 213 g
- E** 90 g

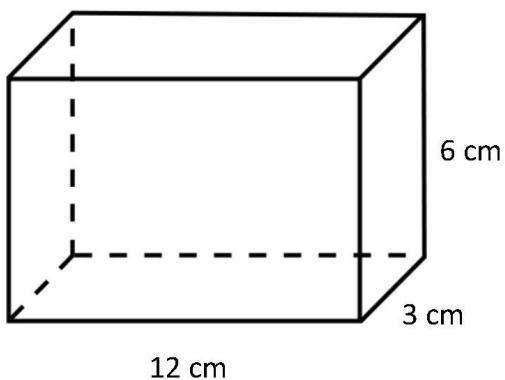
20) A school has 456 pupils. If there are 22 more boys than girls, how many girls are there in the school?

ANSWER: \_\_\_\_\_

21) A sequence is derived by doubling the previous term and then adding two. If the second term in the sequence is 16, what is the fifth term?

- A** 162
- B** 150
- C** 196
- D** 142
- E** 96

22) What is the surface area of this cuboid?



NOT DRAWN TO SCALE

ANSWER: \_\_\_\_\_

23) 12 workers take 6 hours to build a fence. How long would it have taken 9 workers to build the fence?

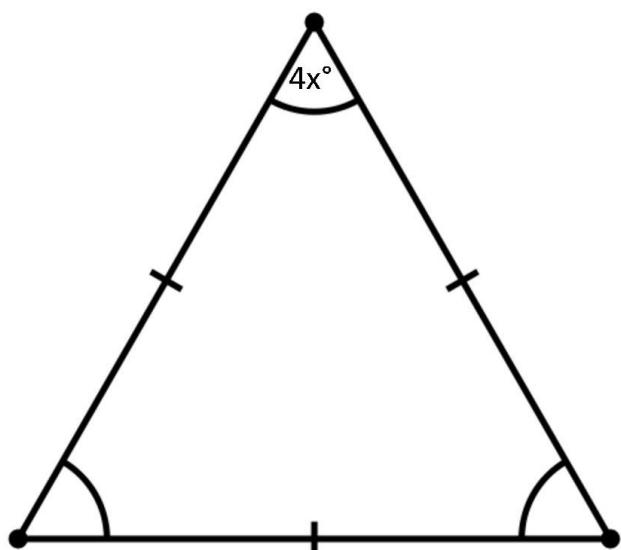
- A 7 hours
- B 12 hours
- C 9 hours
- D 15 hours
- E 8 hours

24) If  $h$  is a whole number that is divisible by 3 and  $h < 57$ , what is the greatest possible value of  $h$ ?

ANSWER: \_\_\_\_\_

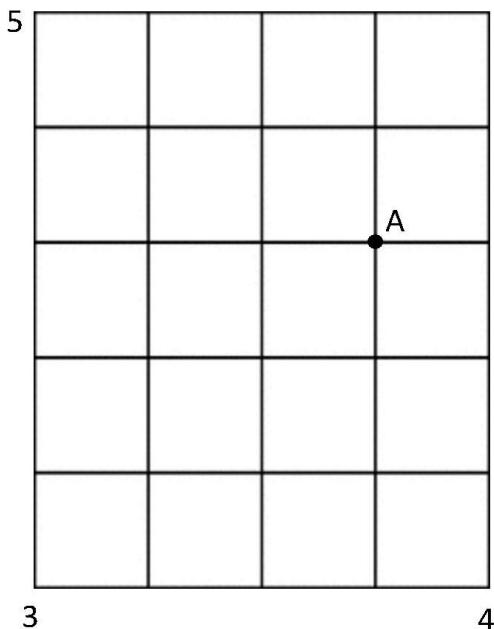
25) The diagram below is of an equilateral triangle.

What is the value of  $x$ ?



- A**  $30^\circ$
- B**  $15^\circ$
- C**  $60^\circ$
- D**  $240^\circ$
- E**  $180^\circ$

26)



What are the coordinates of point A?

- A** (4.2 , 3.5)
- B** (3.75 , 4.2)
- C** (3 , 5)
- D** (3.8 , 4)
- E** (3.75 , 3.75)

27) Which number is not a cube number?

- A** 125
- B** 1
- C** 216
- D** 16
- E** 64

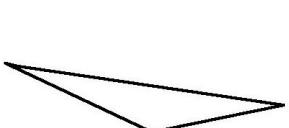
28) What percentage of 3 litres is 600 ml?

- A** 60%
- B** 20%
- C** 30%
- D** 25%
- E** 40%

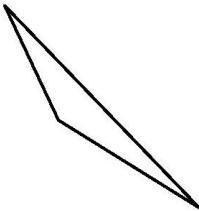
29) Which triangle contains 3 acute angles?



**A**



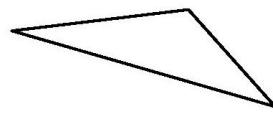
**B**



**C**



**D**



**E**

30) 8 students took an exam. Their marks are listed below.

12 9 8 15 17 21 14 13

What is the median score?

ANSWER: \_\_\_\_\_

\_\_\_\_\_

31) Which sentence is true?

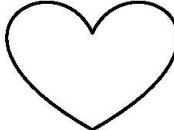
- A** All circles have three sides.
- B** The diameter of a circle is bigger than its radius.
- C** All circles have a volume.
- D** The circumference of a circle is 5 times bigger than its radius.
- E** The radius of a circle is bigger than its diameter.

32) If 6 out of every 10 sheep on a farm are male, what is the probability that a sheep picked at random is female?

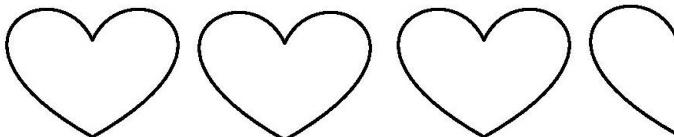
- A**  $\frac{1}{5}$
- B**  $\frac{4}{5}$
- C**  $\frac{3}{5}$
- D**  $\frac{2}{5}$
- E**  $\frac{1}{4}$

33) If 30% of  $g$  is 70, what is 15% of  $g$ ?

- A 105
- B 32.5
- C 35
- D 18
- E 62.5

34) On a pictograph, the symbol  represents 7 million people.

How many people are represented by the following?



- A 22,000,000
- B 23,500,500
- C 17,500,000
- D 28,250,000
- E 24,500,000

35) Sally has a piece of string that is 200 cm long. She cuts off 6 pieces, each  $x$  cm long.  
Which expression shows the length of string remaining in cm?

- A 200
- B  $6 \times x \times 200$
- C  $200 - 6x$
- D  $200 - x - x - x - x - x - x$
- E  $6x - 200$

36) The ratio of 1.2 to 1 is equivalent to which of the following?

- A 8 to 6
- B 6 to 5
- C 4 to 3
- D 2 to 1
- E 12 to 11

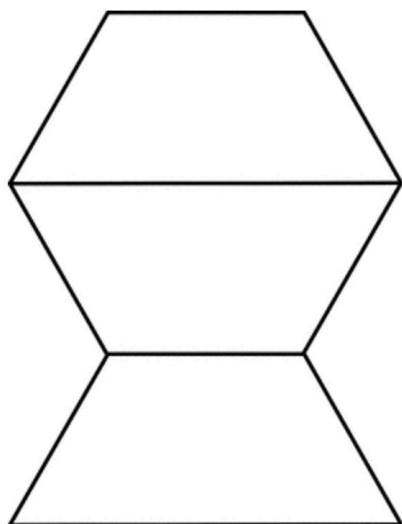
37) The set of numbers T consists of all the factors of 36.  
The set of numbers S consists of all the factors of 20.  
How many numbers are in both sets?

- A** One
- B** Two
- C** Three
- D** Four
- E** Five

38) Paul uses 40 litres of petrol for every 90 miles he drives.  
How many litres of petrol will he use to drive 315 miles?

ANSWER: \_\_\_\_\_

39) Figure A consists of three identical shapes, each with an area of  $34.657 \text{ cm}^2$ .  
What is the total area of Figure A?



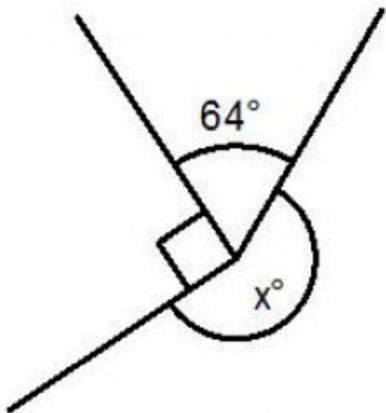
ANSWER: \_\_\_\_\_

Figure A

40) In a class of 30 boys, every second boy had black hair.  
How many boys had black hair?

- A  $30 \div 3$
- B  $30 \times \frac{1}{2}$
- C  $20 \times 0.7$
- D  $30 \div \frac{2}{5}$
- E 30

41) Calculate angle x.



ANSWER: \_\_\_\_\_