

SCHOOL:

Eastern Area Mathematical Challenge 2010

Round 1(30 marks)

15 starters for 30

1. What is 18% of £25 ?

2. What is $\frac{5}{8} - \frac{1}{3}$ as a fraction?

3. What is $\frac{11}{8}$ as a decimal ?

4. Joan buys a computer priced at £600 and receives a discount of 10%. She also buys a television priced at £900 and receives a discount of 20%. What percentage discount does she receive off the total price of the two items?

5. Solve $\frac{x+4}{3} + \frac{x-1}{2} = 4\frac{1}{2} - x$

6. Two dice are rolled.

What is the probability that the difference in the scores is one?

7. Factorise $2x^2 + 5x - 117$.

8. The median weight of 5 bags of potatoes is 24kg. Three bags weigh the same. The heaviest bag is 50% heavier than the lightest bag.

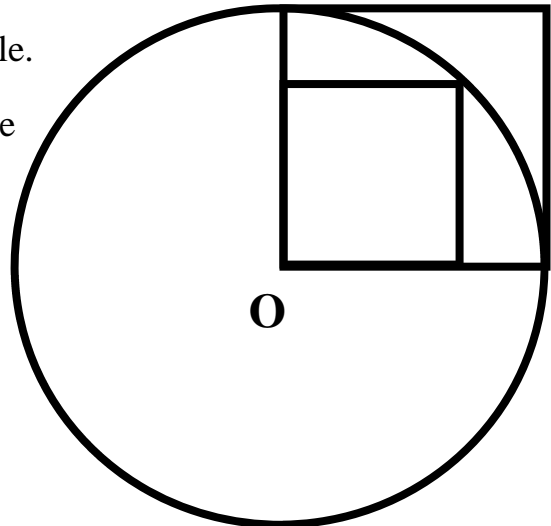
The mean weight of the five bags is 27kg.

What is the weight of the lightest bag?

SCHOOL:

9. To convert temperature $^{\circ}\text{F}$ to temperature $^{\circ}\text{C}$,
 you subtract 32, multiply by 5 and then divide by 9.
 The temperature yesterday was 20°C . Today is 18°F warmer.
 What is the temperature today in degrees centigrade?

10. The diagram shows two squares and a circle.
 O is the centre of the circle and each square
 join at O.
 The area of the small square is 10cm^2 .
 Calculate the area of the large square



11. A regular hexagonal prism has a length of 10cm. Each edge on the hexagon
 is of length 8cm. A piece of wire 2m long is used to build a wire frame of
 the prism. How much wire is left over?

12. Find the highest common factor of 462 and 1155.

13. A rabbit is sat 100m from his hole, when a fox sees it. The fox is a further
 50m from the hole. The rabbit runs towards the hole at 4 ms^{-1} with the fox
 chasing. The fox catches the rabbit (ah... sad) 20m from the hole. How fast
 was the fox running?

14. Make t the subject of the formula $2 = \frac{q-t}{r-t}$

15. What is the acute angle between the hands of a
 clock when the time is 1.15pm?