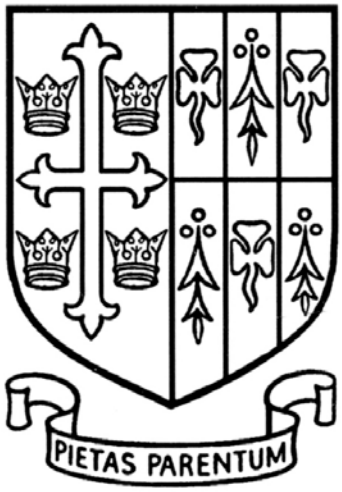
ST EDWARD'S

OXFORD



13+ SCHOLARSHIP EXAMINATION 2015

MATHEMATICS

PAPER 1

1 hour

40 marks

Answer all questions.

Calculators are NOT permitted.

Extra Paper is available

Name: _____

1. T, x and y are connected by the formula

$$T = 5x + 2y$$

$x = -3$ and $y = 4$

(a) Work out the value of T.

$T =$ ……

(2)

$T = 16$ and $x = 7$

(b) Work out the value of y.

$y =$ ……

(3)

(Total 5 marks)

2. Nick takes 26 boxes out of his van.
The weight of each box is 32.9 kg.

Work out the **total** weight of the 26 boxes.

..... kg

(Total 3 marks)

3. Lisa used $\frac{1}{2}$ of her lottery win to buy a house.

She gave $\frac{1}{6}$ of her lottery win to a charity.

Lisa then shared the remainder of her lottery win equally between her four children.

Work out the fraction of Lisa's lottery win that **each** of her four children received.

……..

(Total 4 marks)

4. Brass is made up of copper and zinc.
Every 100 grams of brass contains 20 grams of zinc.

(a) Work out the weight of zinc in 60 grams of brass.

…… g

(2)

Brass contains 4 parts by weight of copper to 1 part by weight of zinc.

(b) Work out the weight of copper in 350 grams of brass.

…… g

(2)

(Total 4 marks)

5. Pam bought a box of 40 oranges for £2.

$\frac{3}{10}$ of the 40 oranges were damaged so she threw them away.

She sold the remaining oranges at x pence each.

She made a profit of 40%.

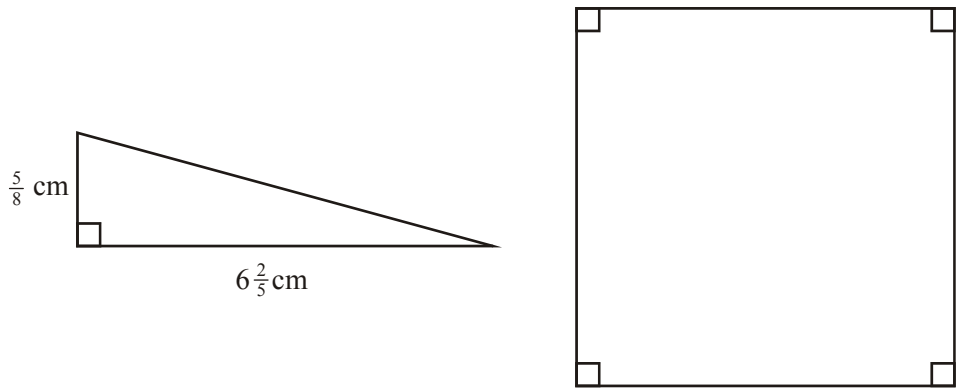
Calculate the value of x.

x = …….

(Total 4 marks)

6.

Diagrams **NOT** accurately drawn



The area of the square is 18 times the area of the triangle.

Work out the **perimeter** of the square.

..... cm

(Total 5 marks)

7. The fraction, p, of an adult's dose of medicine which should be given to a child who weighs w kg is given by the formula

$$p = \frac{3w + 20}{200}$$

A child weighs 35 kg.

(a) Work out the fraction of an adult's dose which should be given to this child.
Give you answer as a fraction in its simplest form.

……

(2)

(b) Use the formula $p = \frac{3w + 20}{200}$ to find the weight of a child whose dose is the same as an adult's dose.

…… kg

(3)

(Total 5 marks)

8. Eggs are sold in boxes.
A small box holds 6 eggs.
A large box holds 12 eggs.

Hina buys x small boxes of eggs.
Hina also buys 4 less of the large boxes of eggs than the small boxes.

(a) Find, in terms of x, the total number of eggs in the **large** boxes that Hina buys.

.....

(1)

(b) Find, in terms of x, the total number of eggs that Hina buys.
Give your answer in its simplest form.

.....

(2)
(Total 3 marks)

9. ABC is an isosceles triangle.

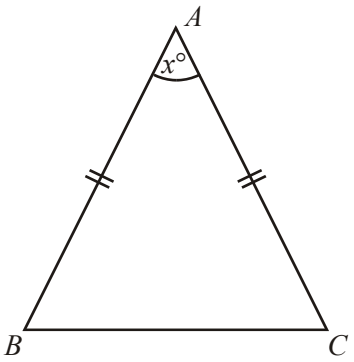


Diagram **NOT** accurately drawn

$AB = AC$
$AB = 3p + q$
$BC = p + q$

(a) Find an expression, in terms of p and q, for the perimeter of the triangle.
Give your answer in its simplest form.

.....

(2)

Angle $A = x°$

(b) Find an expression, in terms of x, for the size of angle B.

.....

(2)

(c) Solve the simultaneous equations

$$3p + q = 11$$

$$p + q = 3$$

$p =$ .....

$q =$ .....

(3)
(Total 7 marks)