ST EDWARD'S
OXFORD

14+ ENTRANCE EXAMINATION

For entry in
September 2015

Mathematics

Time: 1 hour

Candidates Name: ……

Instructions to Candidates

Calculators are allowed.

Show all of your working on the paper – answers without working may not get full marks.

1.

a. $2x-5=3x-4$	b. $2(x-7)=3x-7$
c. $3-(4x-3)=1$	d. $\frac{1}{2}(4x-6)=\frac{1}{3}(9x-12)$
e. $5(x-1)=\frac{2(x+4)}{-2}$	f. $\frac{12}{x}=\frac{3}{5}$

2.

a. What is 36% of 500	b. 9 is what percent of 36?
c. 5 is 20 percent of what number?	d. A car cost $27500 new. After a year it decreased in price by 15.5%. What is the price of the car after one year?

3. Simplify:

a . $x^2 \cdot x^3 =$	b. $\frac{x^3}{x^5} =$
c. $\left(2x^3\right)^4 =$	d. $(2n)^4\left(\frac{3}{2}n\right)^3 =$

4. Write as an algebraic expression:

a. Five more than a number	b. Three less than a number
c. Six more than twice a number	d. The sum of a number and its reciprocal

5. Expand and simplify:

a. $(x-4)\cdot(x+3)=$	b. $(x-7)\cdot(x+7)=$
c. $(x+10)^2=$	

6. Simplify:

a. $\left(5x-x^2+3x^3-7\right)+\left(x^2-4x^3+5-7x\right)=$	b. $\left(x-7+2x^2\right)-\left(3-x-5x^2+4x^3\right)=$

7. Factorize completely the following expressions:

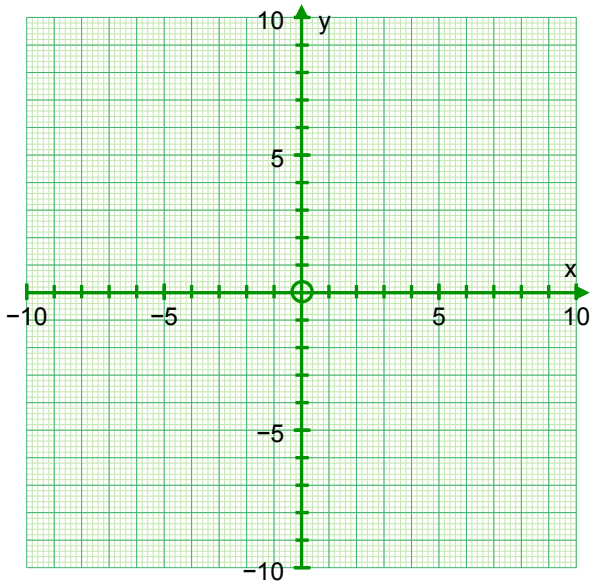
A $4x-6=$	b. $x^2+5x+6=$
c. $x^2-3x-28=$	d. $x^2-36=$

8. Write an equation of a straight line that goes through the points $(2,-3)$ and $(-2,5)$.

b

9. On the set of axes below, graph the following line:

a. $y - 3x = 2$



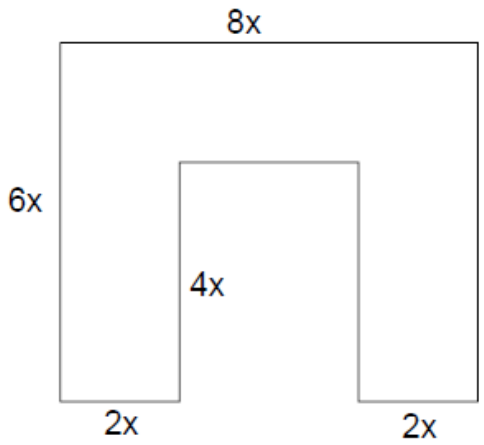
a

10. Solve the following systems of equations using the elimination or substitution method:

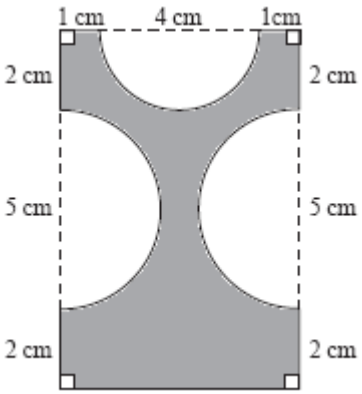
a. $\begin{cases} x+2y=13 \\ x-y=1 \end{cases}$	b. $\begin{cases} 2x-7y=-19 \\ 3x+2y=34 \end{cases}$

11. Find x

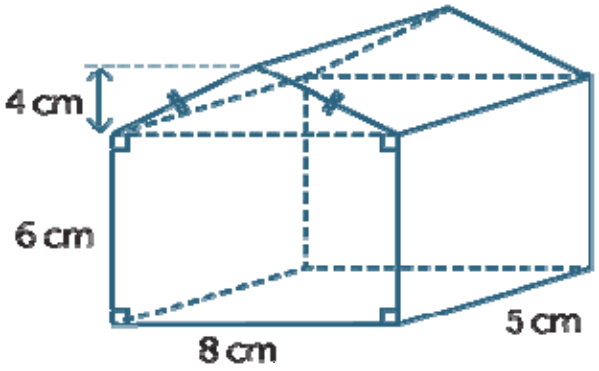
vii) Perimeter = 72 cm



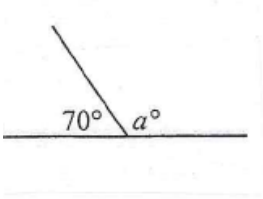
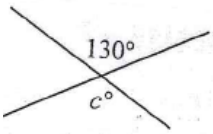
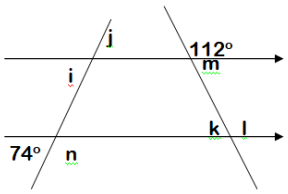
12. Find the shaded area:



13. Find the Volume of the following shape



14. Find the values of the variables in each figure.

a.	b.	c.
		
a=	b=	i = j = k = l = m = n =