

## 13+ Maths Paper

## Sample Questions

## Exam is 1 hour

## No Calculator

Equipment required: Ruler, pen and pencil
Attempt all the questions. SHOW ALL YOUR WORKINGS
1 Work out:
(a) $\quad-13+5$
(b) $\quad 5-6$
(c) $3+{ }^{-} 8$
(d) ${ }^{-} 12-{ }^{-} 23$

2 Work out
(a) $8 x^{-} 7$
(b) $\quad{ }^{-} 28 \div{ }^{-} 4$
(c) $3 x^{-} 5 x^{-} 10$
(d) $\left(21+{ }^{-} 6\right) x^{-} 2$

3 Write down all the factors of 24.

4 Write 36 as a product of its prime factors.

5 Work out:
(a) $2^{4}$
(b) $4^{3}$

6 Simplify:
(a) $5 x+7 x$
(b) $8 x+3 y+9 x-3 y$
(c) $6 p-2 q-4 p+q$
(d) $m \times m \times m \times m$
(e) $3 x w x 5 y z$
(f) $\quad y^{12} \div y^{4}$
$7 \quad$ Expand the bracket: $\quad 3(4 a-7 c)$

8 Factorise: $\quad 15 x+40$
11 Work out the following, simplifying your answers where possible:
(a) $\frac{4}{5}+\frac{7}{15}$
(b) $\frac{3}{4} \times \frac{7}{9}$

## 8. What are these shapes?


9. What size is angle $p$ ?


10 Factorise: $\quad 15 x+40$

11 Work out the following, simplifying your answers where possible:
(a) $\frac{4}{5}+\frac{7}{15}$
(b) $\frac{3}{4} \times \frac{7}{9}$

1210 students were asked how many packets of crisps they ate during last week.

$$
2,5,7,2,4,3,4,4,0,4
$$

## Calculate:

(a) the mean,
(b) the mode.

13 Solve the following equations
(a) $5 x-4=26$
(b) $3 x-5=10$
(c) $3(x+7)=45$
14. Divide $£ 480$ in the ratio $3: 5$.
15.

(a) Work out the size of angle $m$. Give a reason for your answer.
(b) Work out the size of angle $n$. Give a reason for your answer.

(a) Rotate shape $\mathrm{A} 90^{\circ}$ clockwise about the origin. Label the image P .
(b) Translate shape $\mathbf{A}$ by $\binom{3}{-2}$. Label the image Q .
(c) Describe fully the single transformation which maps shape A onto shape B
$\qquad$
$\qquad$
$\qquad$

Enlarge the triangle by scale factor 2.
Use point $A$ as the centre of enlargement.


For the equation $y=3 x+1$, complete the table of values, then draw the graph.

| $x$ | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $y$ |  | -8 |  |  | 1 |  | 7 |  |  |



