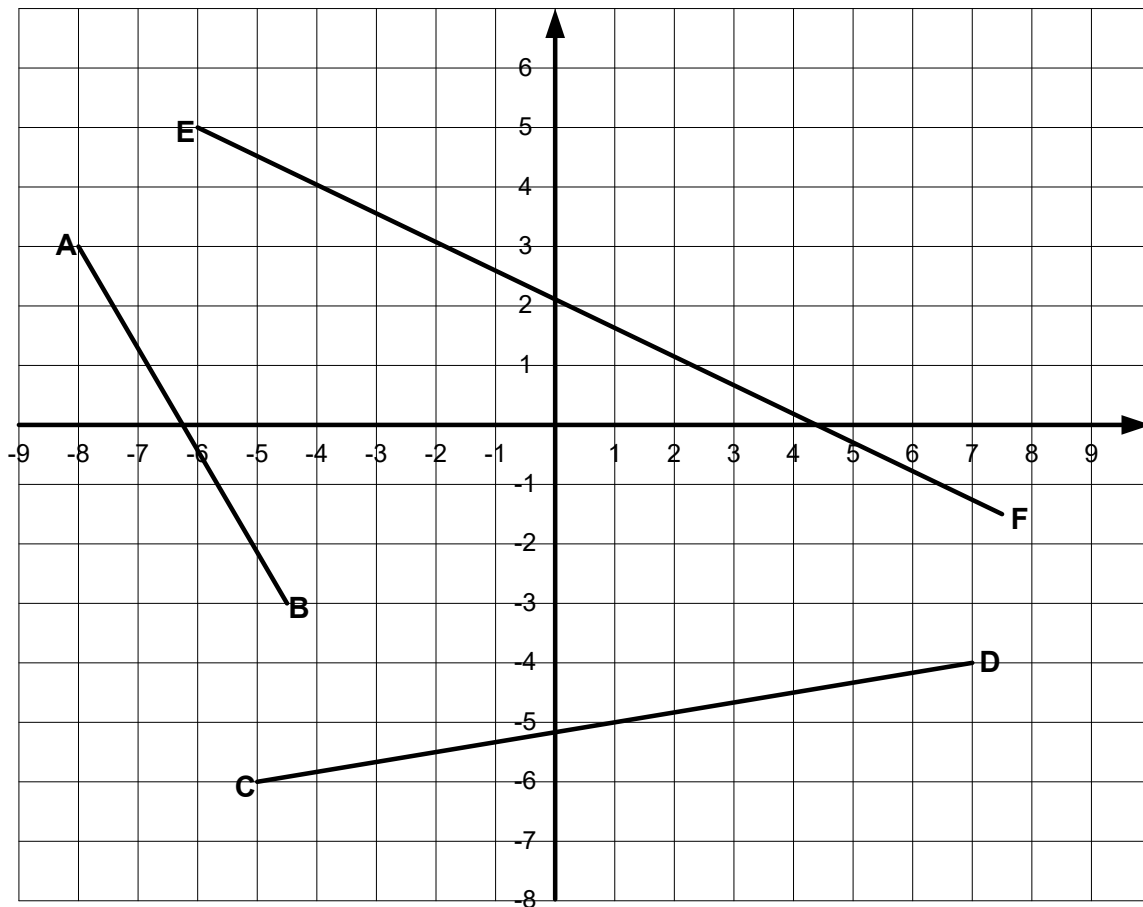


Midpoints and Co-ordinates



- 1 Find the midpoint of line AB.
- 2 Find the midpoint of line CD.
- 3 Find the midpoint of line EF.
- 4 Find the co-ordinates of a point one third of the way along the line CD.
- 5 Find the co-ordinates of a point two thirds of the way along the line EF.
- 6 Find the co-ordinates of a point one quarter of the way along the line AB.

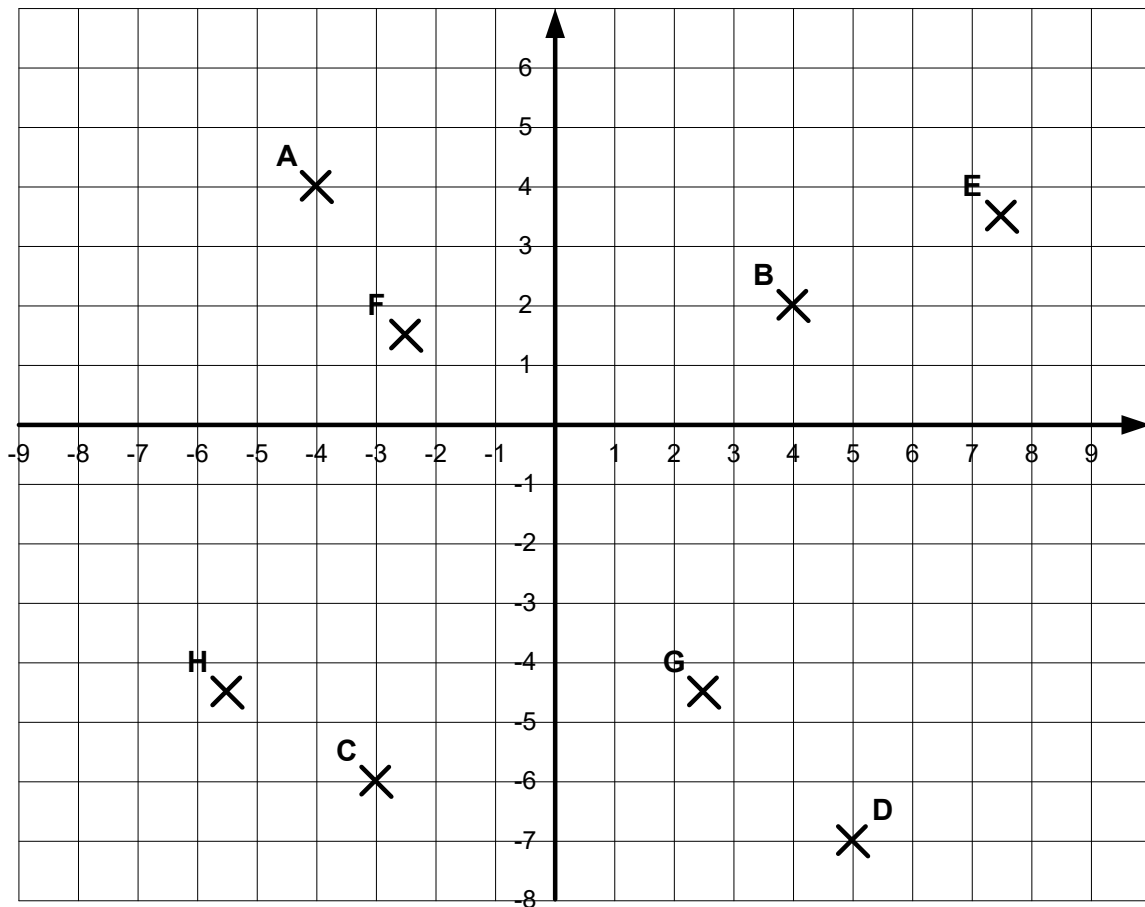
Fractions

7 $\frac{7}{12} \times \frac{18}{21} =$

8 $\frac{4}{5} + \frac{2}{3} =$

9 $\frac{5}{6} - \frac{3}{8} =$

Co-ordinates



10 Write the co-ordinates of each of the points from A to H.

11 On to the grid above, mark on the co-ordinates given below

J (4,7) K (-3,2) L (8,-6) M (-6,-3)

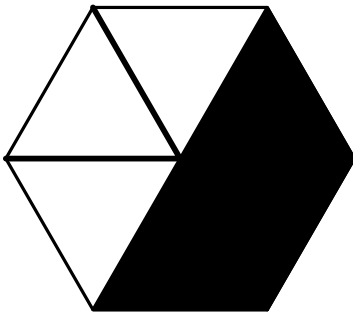
Percentages and Decimals

12 Convert percentages into decimals or decimals into percentages

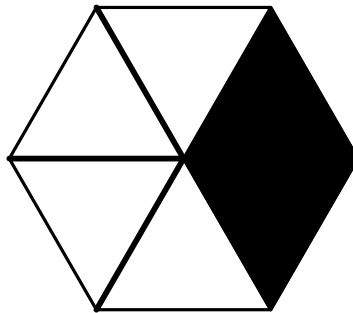
- | | | |
|-----------|---------|-----------|
| a. 7% | g. 5% | m. 0.9365 |
| b. 12% | h. 3.2% | n. 2.39 |
| c. 45% | i. 0.6 | o. 4.029 |
| d. 51% | j. 0.2 | p. 4.9 |
| e. 18.5% | k. 0.92 | q. 0.004 |
| f. 97.72% | l. 0.08 | |

13 What fraction of the following shapes are shaded?

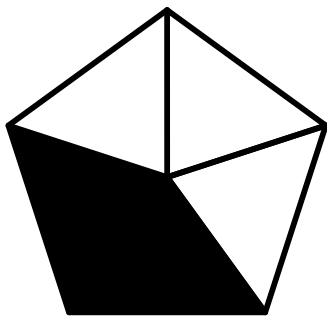
a



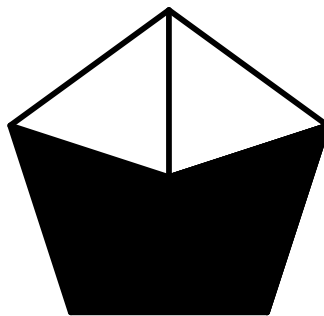
b



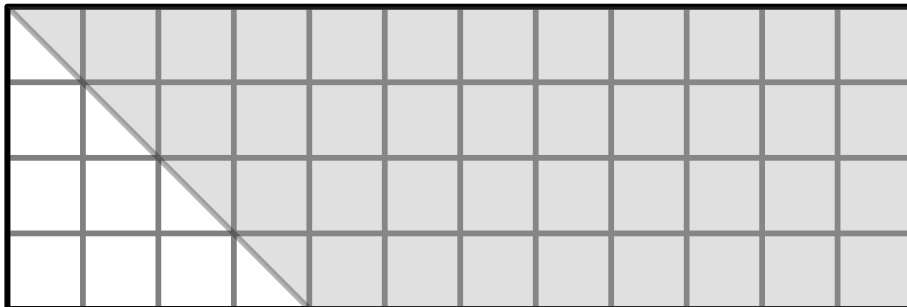
c



d



e



Simplify

14 $3p + 5p + p + 2q - 7q =$

15 $3m^2 + m^2 + 6m^2 =$

16 $\frac{3m^2 \times 4m^5 \times 2m^{-3}}{2m^3 \times m^2} =$

Factors

- 17 Write down the factors of 24.
- 18 Write down the factors of 18.
- 19 Write down the factors of 26.

HCF and LCM

- 20 Find the HCF and LCM of 24 and 36.
- 21 Find the HCF and LCM of 30 and 75.

22 $A = 2^3 \times 3 \times 5^2$ and $B = 2^2 \times 3^2 \times 5^3 \times 11$

What is the highest common factor of A and B?

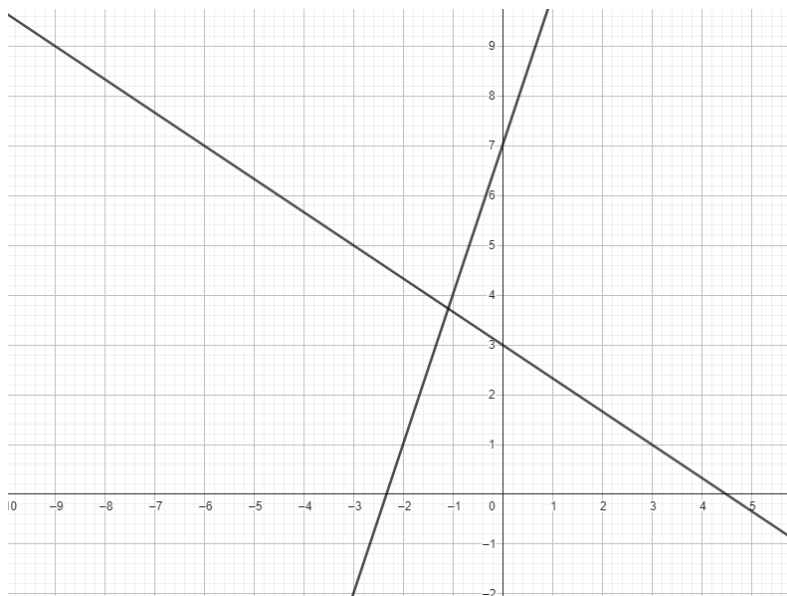
23 $A = 2^5 \times 3 \times 7^2$ and $B = 2^3 \times 5^2 \times 7^3 \times 17$

What is the highest common factor of A and B?

24 $A = 3^3 \times 7 \times 11^2$ and $B = 2^6 \times 3^2 \times 5^4 \times 11$

What is the highest common factor of A and B?

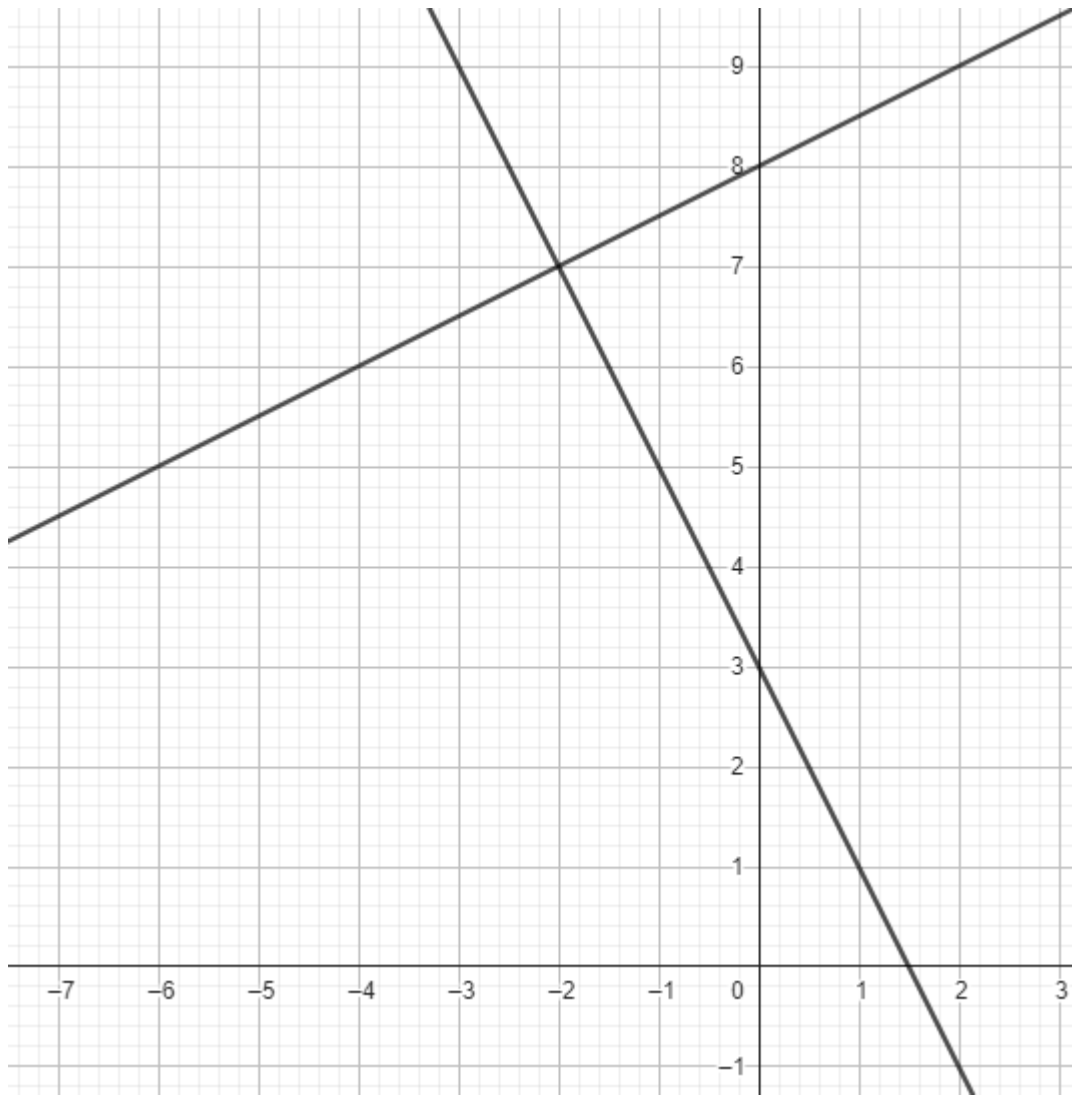
Simultaneous Equations



The graphs of $y = 3x + 7$ and $y = -\frac{2}{3}x + 3$ are shown above.

- 25
- a) Label each graph correctly.
 - b) Use the graph to solve these simultaneous equations.

26 The graphs of two simultaneous equations are shown below.



One graph is of $y = \frac{1}{2}x + 8$ and the other is of $y = -2x + 3$.

- Label each graph line.
- Use the graphs to solve the simultaneous equations.
- What relationship do these lines have towards each other?

Solving equations

27 Solve the following:

- $\frac{x}{5} = 3\frac{2}{5}$
- $4x + 7 = 79$
- $3x^2 + 2 = 29$
- $3(2x + 7) = 39$
- $5(4x - 7) = 8x + 5$

Unit Conversion

28 Fill in the blanks in the boxes below.

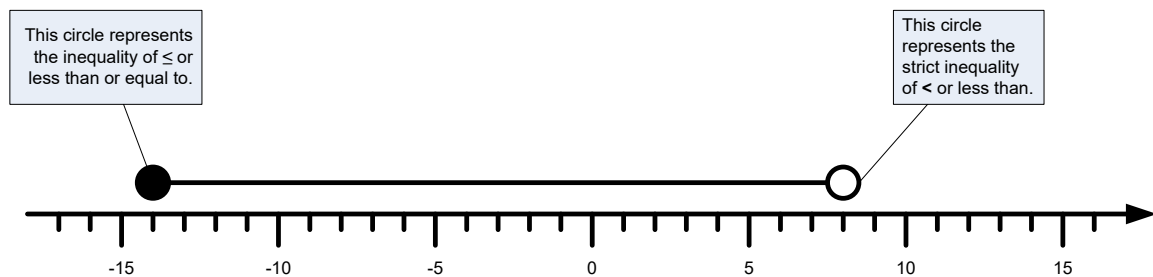
Metres	Centimetres	Millimetres
3.2		
	15	
		294
		706
		24
	8.9	
5		
	87.67	

Kilograms	Grams	Milligrams
8		
	18	
0.4		
		23541
0.86		
	6.4	

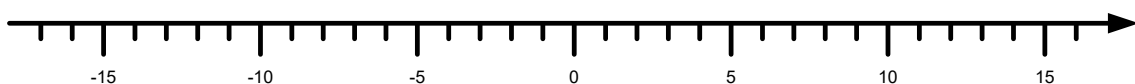
Inequalities

29 Draw the inequalities line to represent the following below

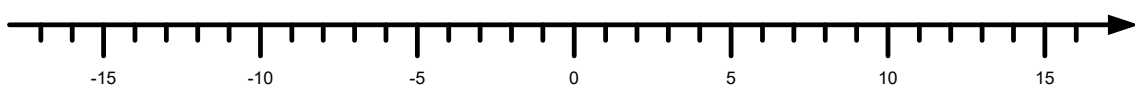
$$-14 \leq x < 8$$



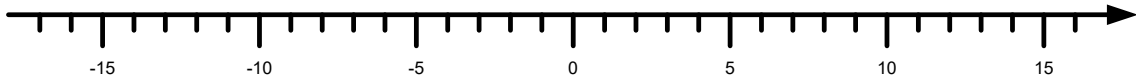
a) $-8 < x < 5$



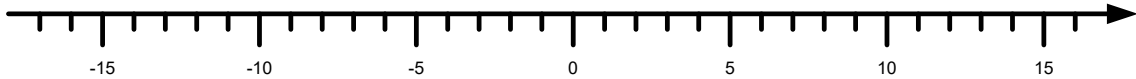
b) $2 \leq x \leq 16$



c) $3 \leq 2x + 6 < 14$



d) $\frac{1}{2} < \frac{3x}{2} + 8$



Money Problems

30 Billy needs a taxi home.

Yellow Cars charge £2 plus 75p per mile.

Black Cabs charge £4 plus 35p per mile.

Green Automobiles charge £3.50 plus 45p per mile.

Billy needs to travel 9 miles.

Which taxi company will be the cheapest?

31 Charlie, Diana and Evelyn all earn the same amount of money.

Charlie saves 45% of his money.

Diana spends $\frac{3}{10}$ of her rent on food and $\frac{1}{4}$ of her money on food. She saves the rest.

The ratio of what Evelyn spends on food and rent to what she saves is 3:4.

Who saves the most money each month?

32 James bought a car for £12,000.

It depreciated (went down) in value by 6% each year.

What was its value after 8 years?

33 In one account, I have £3000. This account pays 8% interest.

In another account, I have £8,000. This account pays 2% interest per year.

After 6 years, how much money would I have assuming I don't spend anything?

Graphs

Equation	Graph
$y = \frac{1}{x}$	
$y = x^2 - 4$	
$y = 2x - 4$	
$y = x^3 + 2$	
$y = -4$	

