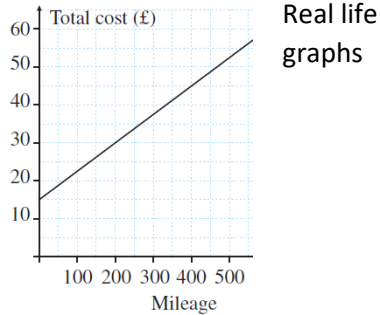
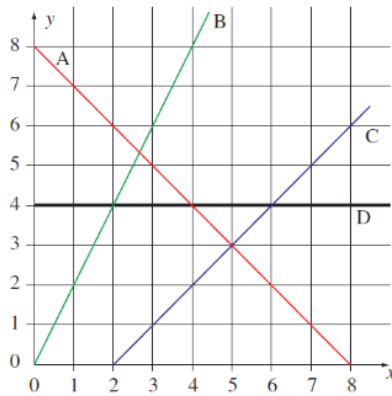


Maths – 8 Core: Spring 1

1 Algebra – Linear graphs



- Write down the equation of each line.
- Draw the graph of $y = 2x + 1$

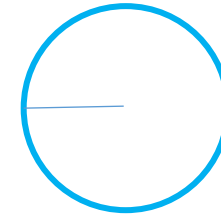
2 Algebra – Expressions and Formulae

If $a = 3$, $b = 5$ and $c = 10$, evaluate

- $3a + 4 = 3 \times 3 + 4 = 13$
- $b^2 - c = 5^2 - 10 = 15$

The area of a circle is given by $A = \pi r^2$. Find the area of a circle when $r = 7\text{cm}$.

$$A = \pi \times 7^2 = 153.9\text{cm}$$



3 Data – Averages and range

“Hey diddle diddle, the **median**’s the middle, add and divide for the **mean**. The **mode** is the one that you see the most, and the **range** is the difference between.”

Number of pencils	0	1	2	3	4
Frequency (number of children)	3	5	4	3	1

Use the table to work out the mean number of pencils.

$$\text{mean} = \frac{(3 \times 0) + (5 \times 1) + (4 \times 2) + (3 \times 3) + (1 \times 4)}{16}$$

total number of children

$$\text{mean} = \frac{26}{16} = 1.625$$

Key: 0|9 = 9

0	9
1	1 6 7 8
2	1 2 7 7 8
3	0 0 1 5 6
4	0 1 2 5

4 Algebra – Equations

Expand and simplify:

- $2(3x + 5)$
- $3(x + 4) + 5(2x - 1)$
- $6(3 + x) - 2(x - 5)$

Multiply everything inside the bracket by the number outside

Solve: inverse operations

$$\begin{aligned} 2x + 3 &= 11 \\ 2x &= 8 && -3 \\ x &= 4 && \div 2 \end{aligned}$$

$$\begin{aligned} 2x + 3 &= 6x - 9 \\ 3 &= 4x - 9 && -2x \\ 12 &= 4x && +9 \\ x &= 3 && \div 4 \end{aligned}$$

1	2	3	4
199	780 – 782	430	178 – 179
205 – 206		417	184
			160 – 161

Keywords:

Expand
Equation
Expression