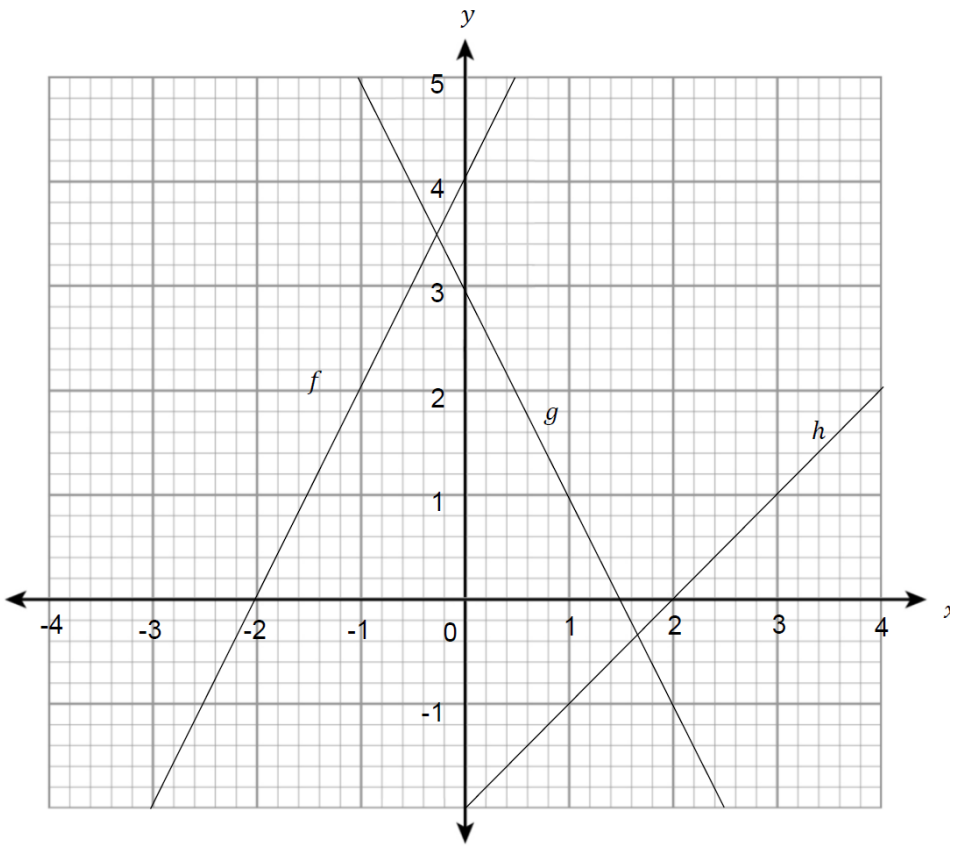
**LINEAR FUNCTION & EQUATION OF THE LINE skill test (from mathsmadeesey.co.uk.)**

**1** Find the equations of the three lines $f$, $g$ and $h$ shown on the graph below.




**2(a)** Find the equation of the line $AB$ where,

$$A = (5,10) \quad B = (11,22)$$

Give your answer in the form $y = mx + c$.

**2(b)** Find the equation of the line CD where,

$$C = (-2,-7)\ D = (-14,-11)$$

Give your answer in the form $y = mx + c$.

**3(a)** In each of the following cases, find the gradient of the straight line by rearranging the equation.

$$y - 3 = 4(x - 2)$$

**3(b)**

$$3y - 2 = 5x + 2$$

**3(c)**

$$\frac{2(3 - 5x)}{y} = 3$$

**4** From the equations below, find two pairs of equations which have the same gradient.

| | |
|---|---|
| A | $y = 2x + 3$ |
| B | $y = 4 - 2x$ |
| C | $-2x - y = 4$ |

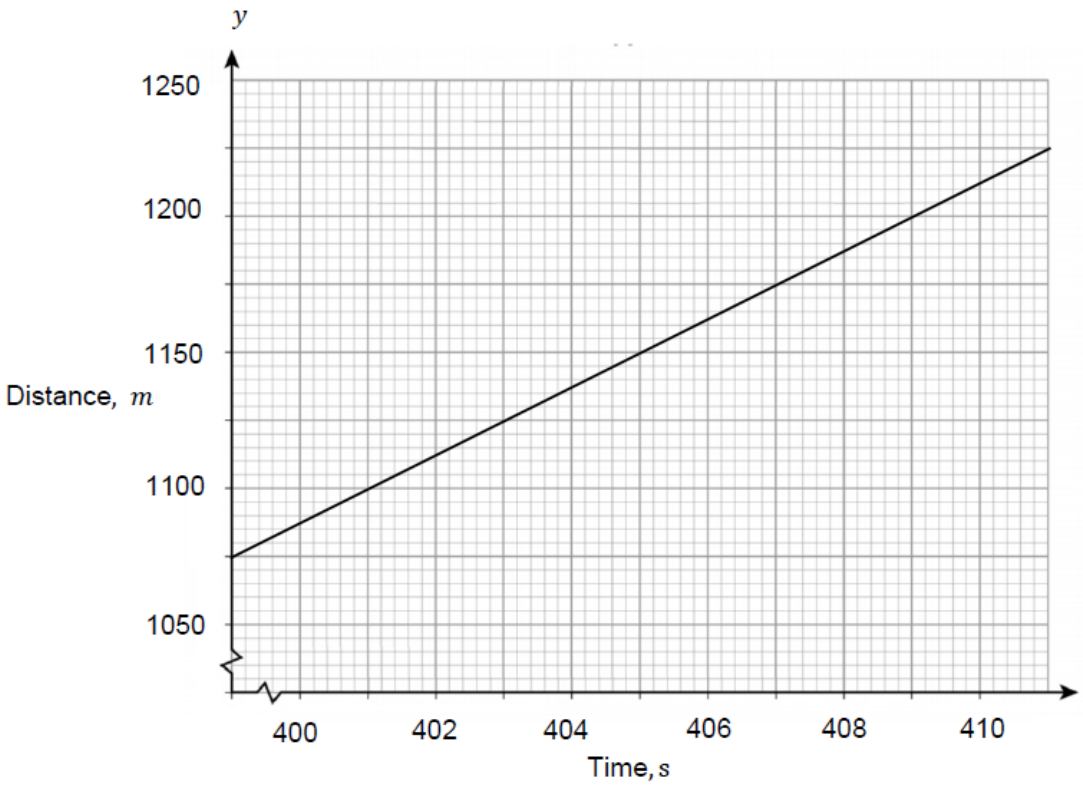
| | |
|---|---|
| D | $-2x + y = 5$ |
| E | $2xy = 5$ |
| F | $\frac{x}{y} = 3$ |

**5** From the equations below, find four pairs of equations which have the same gradient.

| | |
|---|---|
| A | $y = 7x + 4$ |
| B | $(x + 1)^2 - x^2 = 4y$ |
| C | $2(3x + 4) - y - (1 - x) = 0$ |
| D | $2y = 3(2x - 4)$ |

| | |
|---|---|
| E | $\frac{y}{x} = 3$ |
| F | $y - 2(x + 3) = -(6 + x)$ |
| G | $6y - 3x + 2 = 0$ |
| H | $x = y$ |

**6** The graph below is a distance time graph for a car, over 10 seconds, during a race




**6(a)** Find the equation of the straight line graph.

**6(b)** What does the value of $m$ represent in terms of this car.

Explain your answer.

**7(a)** Two lines EF and GH are parallel.

$$EF\colon\ y = 5x - 2.$$

$$G = (5, a)$$

$$H = (2a, 8)$$

Find the value of a.

**7(b)** Hence or otherwise, write down the equation of GH.