

**Starter:**

Find the reciprocals of the following numbers:

a) 4

b) $\frac{3}{5}$

c) 0.2

Top Tips!

(DRAWING) To draw a straight line graph, draw a table

x	0	1	2	3
y				

 then sub 0,1,2 & 3 into the equation (or pick other sensible values). These will give you the coordinates to plot. Always ensure that you then draw a straight line with a ruler going through these points.

(INTERPRETING) Ensure any straight line equation is of the form $y = mx + c$ to draw or interpret. Then 'm' represents the gradient which tells you how steep the line is and 'c' represents the y-intercept.

le Out of the following straight lines, which ones are parallel?
 $y = 3x + 5$ $y - 3x = 3$ $y = 5 - 3x$ $y + 2x = 5$

Rearrange some of them first to get:

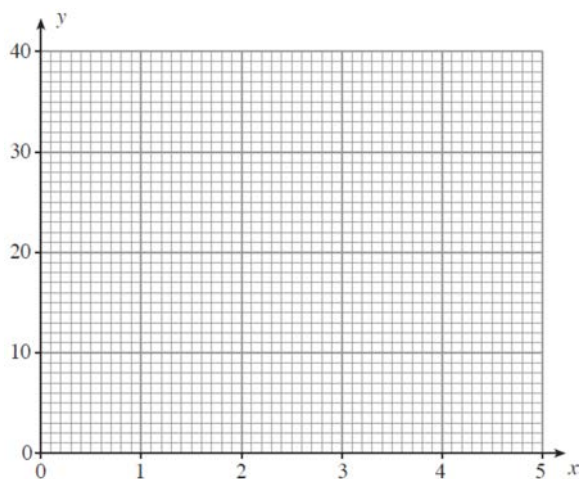
$$y = 3x + 5 \quad y = 3x + 3 \quad y = -3x + 5 \quad y = -2x + 5$$

Now it is clearer that the first and second are parallel as the gradients are the same (ie the number in front of x)

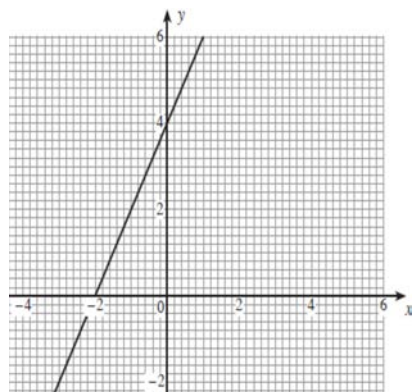
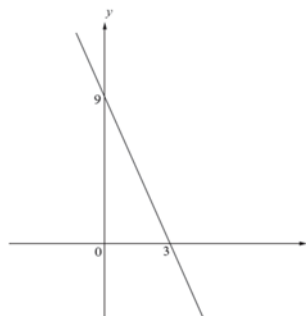
The gradients of perpendicular lines will multiply to make -1.

Skills:

- 1) On the graph paper below, draw the graphs of the straight lines $y = 2x + 8$, $y = 5x + 4$ and $y = 30 - 5x$



- 2) Write down the equation of the straight line shown in the following diagram in the form $y = mx + c$

**Examination Question:****2012 January Link Methods U1 Higher Q15**

The straight line, shown in the sketch above, intersects with another straight line which is not shown.

The other straight line is perpendicular to the straight line shown.

The two straight lines intersect at the point where $x = 1$.

Find the co-ordinates of the point of intersection and the gradient of the other straight line. [6]



Starter:

Find the reciprocals of the following numbers:

a) $4 \quad \frac{1}{4}$

b) $\frac{3}{5} \quad \frac{5}{3}$

c) $0.2 = \frac{2}{10} = \frac{1}{5}$
 therefore the reciprocal is $\frac{5}{1} = 5$

Top Tips!

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y				

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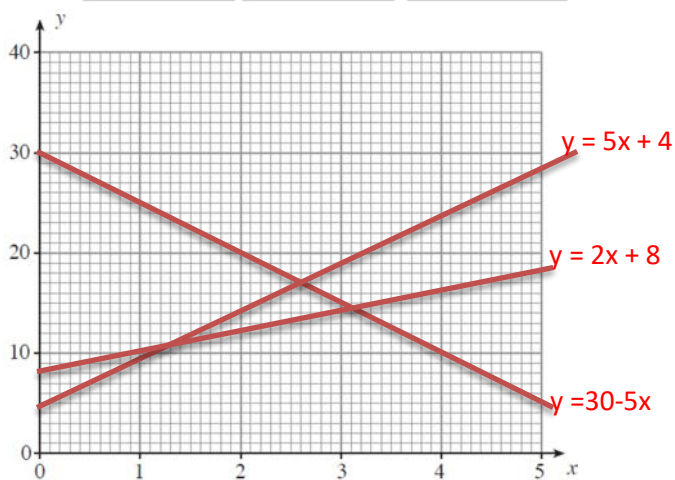
Skills:

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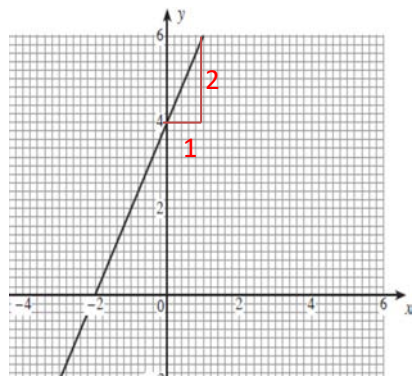
x	0	1	2	3
y	8	10	12	14

x	0	1	2	3
y	4	9	14	19

x	0	1	2	3
y	30	25	20	15



2) Write down the equation of the straight line shown in the following diagram in the form $y = mx + c$



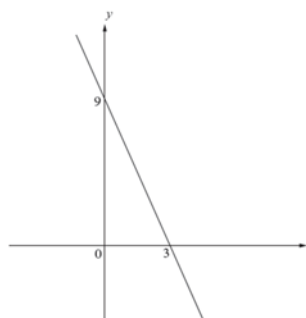
Gradient = $\frac{2}{1} = 2$

y- intercept is at 4

$Y = 2x + 4$

Examination Question:

2012 January Link Methods U1 Higher Q15 (adapted)



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The other straight line is perpendicular to the straight line shown.

The two straight lines intersect at the point where $x = 1$.

Find the co-ordinates of the point of intersection and the gradient of the other straight line. (6)

Gradient(m) = $-\frac{9}{3}$
 $m = -3$

$c = 9$
 Therefore the equation is $y = -3x + 9$

If $x = 1$ when $y = -3 \times 1 + 9$
 $y = 6$

Point of intersection (1,6)

Gradient of the perpendicular = $-1/m = 1/3$

