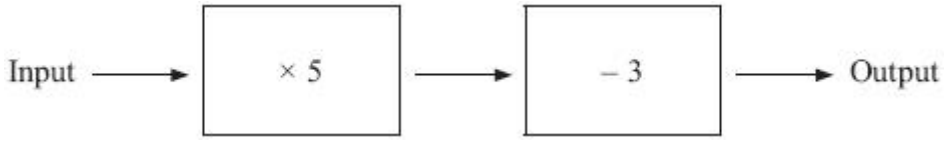
Q1.

Here is a two-stage number machine.
It multiplies by 5 and then subtracts 3

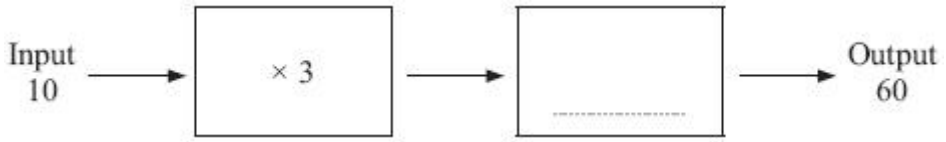


(a) Complete the table.

Input	**Output**
1	2
2	7
5	22
7	
	47

(2)

Here is a different two-stage number machine.



When the input is 10, the output is 60

(b) Complete the number machine.

(1)

(Total for Question is 3 marks)

Q1.

Question		Working	Answer	Mark	Notes
	(a)		32 and 10	2	B1 for 32 in the correct place B1 for 10 in the correct place
	(b)	10×3×2=60 or 10 ×3 +30 = 60	×2 or +30	1	B1 for ×2 or +30

Q2.

You can use this rule to work out the total charge for hiring a concrete mixer.

Total charge = £30 plus £8 each day

Esme hired a concrete mixer for 4 days.

(a) Work out the total charge.

.....

(2)

William also hired a concrete mixer.

The total charge was £110

(b) Work out how many days William hired the concrete mixer for.

.....

(3)

(Total for Question is 5 marks)

Q2.

Question		Working	Answer	Mark	Notes
	(a)	30 + 8×4	62	2	M1 for 30 + 8×4 or attempt to add four 8s to 30 (allow one error in addition) A1 cao
	(b)	110 – 30 = 80 80÷8 = 10 **OR** 110 – 62 = 48 48÷8 = 6 4 + 6 = 10	10	3	M1 for 110 – 30 (=80) M1 (dep) for '80' ÷ 8 or A1 cao OR M1 for 110 – 62 (= 48) M1(dep) for '48'÷8 = 6 A1 cao

Q3.

$y = 4x + c$

$x = 7.5$
$c = 5.4$

(a) Work out the value of y.

.....

(2)

$y = 4x + c$

$y = 18.8$
$c = -2.4$

(b) Work out the value of x.

.....

(2)

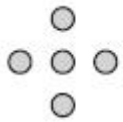
(Total for Question is 4 marks)

Q3.

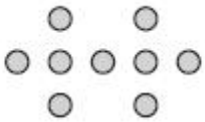
Question		Working	Answer	Mark	Notes
	(a)	$y = 4 \times 7.5 + 5.4$	35.4	2	M1 for $4 \times 7.5 + 5.4$ A1 cao
	(b)	$18.8 = 4x - 2.4$ $x = \frac{18.8 + 2.4}{4}$	5.3	2	M1 for intention to add 2.4 to 18.8 or to subtract -2.4 from 18.8 or to divide 18.8 and (-)2.4 by 4 A1 cao

Q4.

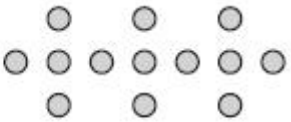
Here is a sequence of patterns made with counters.



pattern number 1



pattern number 2



pattern number 3

(a) In the space below, draw pattern number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of counters	5	9	13		

(1)

(c) Find an expression, in terms of *n*, for the number of counters in pattern number *n*.

.....

(2)

Habeeb has 50 counters.
He wants to use as many of his counters as possible to make a pattern in the sequence.

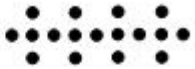
(d) What is the number of the pattern he can make using the greatest number of his counters?

.....

(2)

(Total for Question is 6 marks)

Q4.

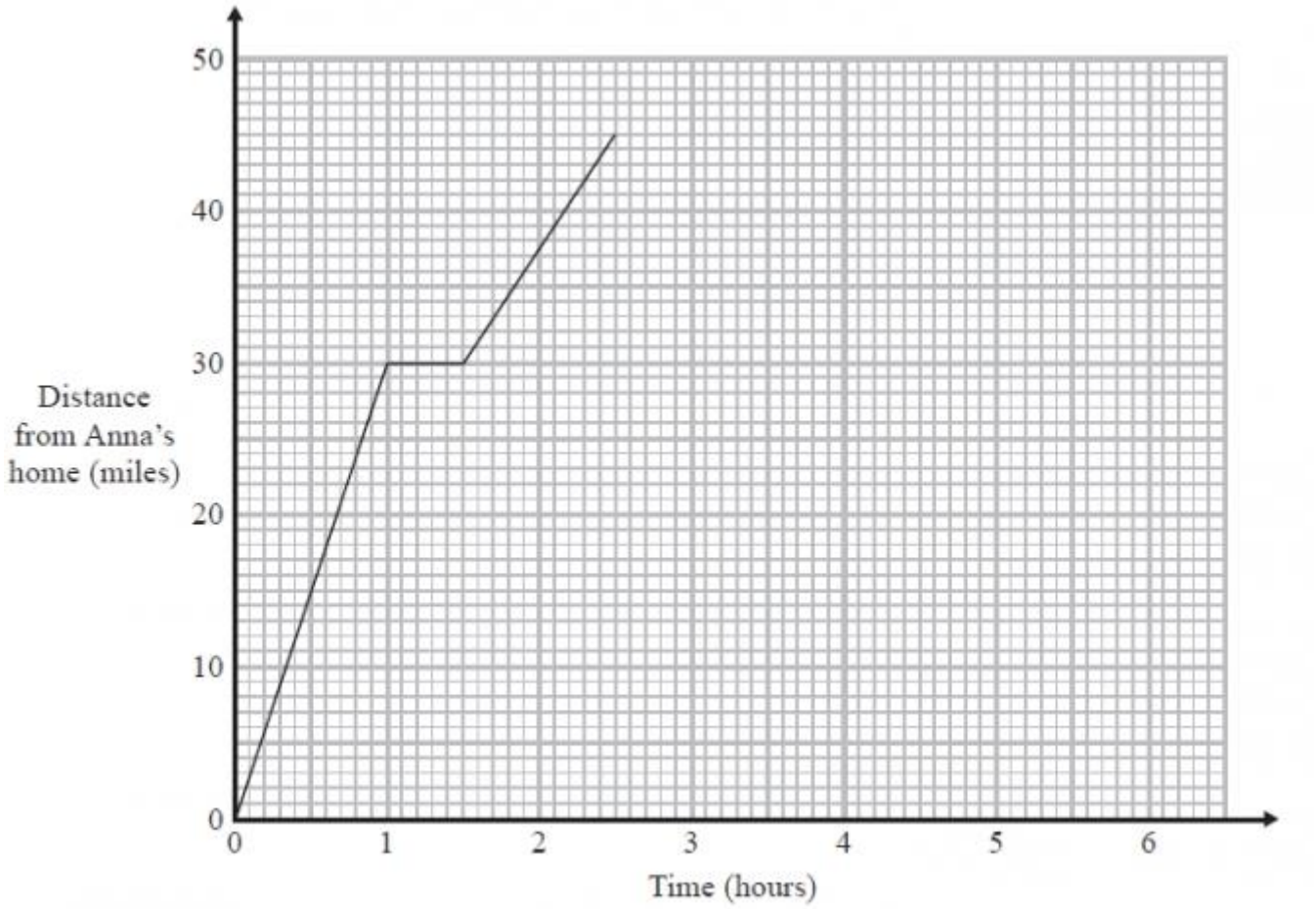
PAPER: 1MA0_2F					
Question		**Working**	**Answer**	**Mark**	**Notes**
	(a)			1	B1 cao
	(b)		17, 21	1	B1 for 17, 21 cao
	(c)		$4n + 1$	2	B2 for $4n + 1$ oe (B1 for $4n + k$, $k \neq 1$, or k is absent or $n = 4n + 1$)
	(d)		12	2	M1 for $(50 - 1) \div 4$ **or** evidence of using their formula from part (c) if in the form $an+b$ **or** repeated addition of 4 (at least 3) ft table in part (b) **or** 49 seen A1 cao

(Higher and Foundation)

Q5.

Anna drives 45 miles from her home to a meeting.

Here is the travel graph for Anna's journey to the meeting.



Anna's meeting lasts for 1 hour.
She then drives home at a steady speed of 30 miles per hour with no stops.

Complete the travel graph to show this information.

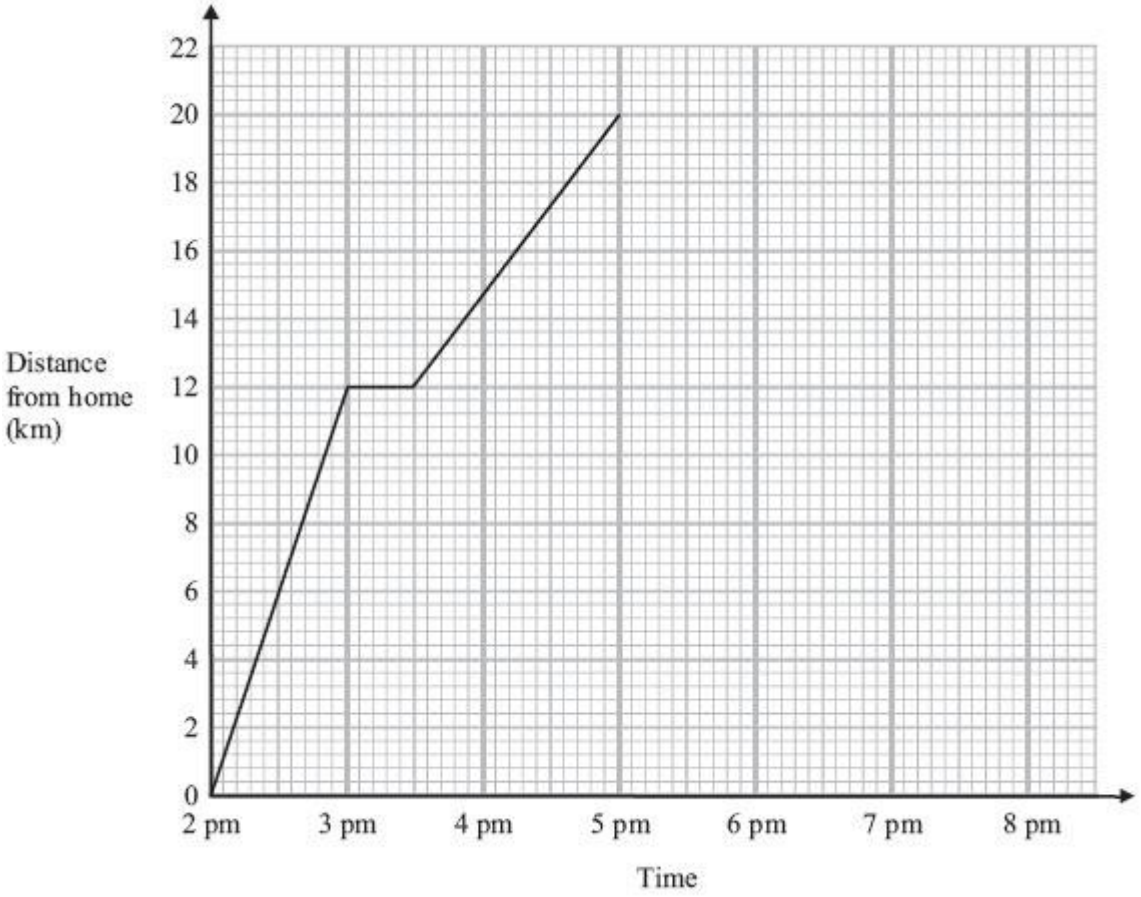
(Total for Question is 2 marks)

Q5.

PAPER: 1MA0_2F					
Question		**Working**	**Answer**	**Mark**	**Notes**
			Graph completed	2	B1 for line from (2.5, 45) to (3.5, 45) B1 ft line of correct gradient to axis (after 1½ hour)

Q6.

Simon went for a cycle ride.
He left home at 2 pm.
The travel graph represents part of Simon's cycle ride.



At 3 pm Simon stopped for a rest.
(a) How many minutes did he rest?

.....

(1)

(b) How far was Simon from home at 5 pm?

.....

(1)

At 5 pm Simon stopped for 30 minutes.
Then he cycled home at a steady speed.
It took him 1 hour 30 minutes to get home.

(c) Complete the travel graph.

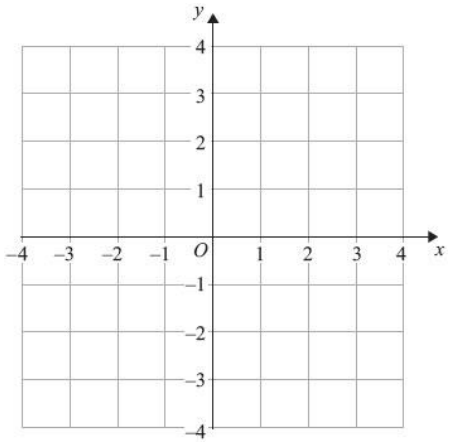
(2)

(Total for Question is 4 marks)

Q6.

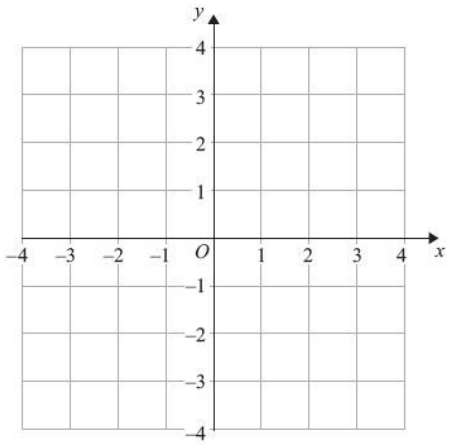
		Working	Answer	Mark	Notes
	(a)		30	1	B1 for 30 minutes oe
	(b)		20	1	B1 cao
	(c)		graph completed	2	B1 for horizontal line from (5, 20) to (5.30, 20) B1 for a single straight line with the correct gradient from '(5.30, 20)' to the time axis

Q7.



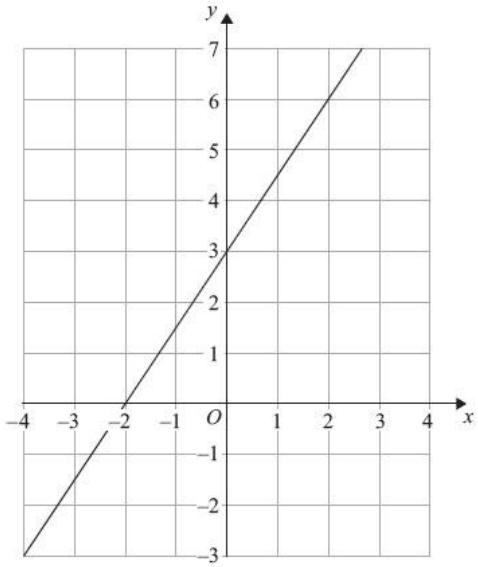
(a) On the grid above, draw the line $x = 3$

(1)



(b) On this grid, draw the line $y = x$

(1)



(c) Find the gradient of the straight line drawn on this grid.

.....

(2)

(Total for Question is 4 marks)

Q7.

		Working	Answer	Mark	Notes
	(a)		$x = 3$ drawn	1	B1 for $x = 3$ drawn [Note: each line drawn must be a single line segment satisfying $x = 3$]
	(b)		$y = x$ drawn	1	B1 for $y = x$ drawn [Note: each line drawn must be a single line segment satisfying $y = x$]
	(c)	Gradient = $\frac{3-0}{0--2}$	1.5	2	M1 for a method to find the gradient of the given line A1 for 1.5 oe

Q8.

$P = 3.5x - y$

(a) Work out the value of P when $x = 12$ and $y = 5$

.....

(2)

(b) Work out the value of P when $x = -9$ and $y = -6$

.....

(2)

(Total for Question is 4 marks)

Q8.

Question		Working	Answer	Mark	Notes
	(a)	3.5 × 12 – 5	37	2	M1 for 3.5 × 12 – 5 or 42 - 5 A1 cao
	(b)	3.5 × –9 – –6	–25.5	2	M1 for 3.5 × –9 – –6 **or** 3.5×–9 + 6 **or** sight of –31.5 A1 for –25.5 **or** $-51\frac{1}{2}$ **or** –25½