



Name:

**Paper 2
YEAR 9 Mathematics
End of Year Assessment
2020/21**

Time limit: 45 **minutes**
Marks available for this paper: 47 marks

READ THESE INSTRUCTIONS FIRST

Write in dark blue or black pen. You should use a pencil for any diagrams or graphs.

Do not use correction fluid.

Answer **all** questions.

If working is needed for any question, it must be shown below that question.

Final answer marks will not be awarded without preceding method marks.

Electronic calculators are allowed.

If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to **three significant figures**.

Q1.

(a) Simplify $3c^2 + 5c^2 - c^2$

..... (1)

(b) Simplify $4x - 3y + 5x - 2y$

..... (2)

(Total for question = 3 marks)**Q2.**

(a) Simplify $3e^{7f} \times 4e^{2f}$

..... (2)

(b) Simplify fully $(27a^{12})^{\frac{2}{3}}$

..... (2)

(c) $-2 \leq n < 3$

 n is an integer. Write down all the possible values of n .

..... (1)

(Total for question = 5 marks)**Q3.** Expand and simplify the expressions below.

(a) $4(3x - 1) - 3(2x + 3)$

..... (2)

(b) $(3x - 1)^2$

.....
(2)

(c) $(x - 1)(x - 2)(x - 3)$

.....
(3)

(Total for question = 7 marks)

Q4. Factorise fully the expressions below:

(a) $4y - 24y^2$

.....
(2)

(b) $x^2 - 10x + 16$

.....
(2)

(c) $6x^2 + 5x - 6$

.....
(2)
(Total for question = 6 marks)

Q5.

(a) The diagram shows a parallelogram $ABCD$.

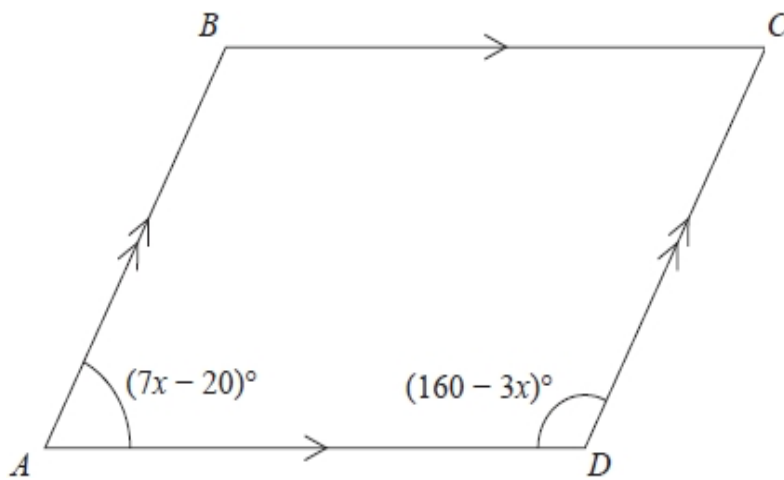


Diagram NOT
accurately drawn

Angle $BAD = (7x - 20)^\circ$
Angle $ADC = (160 - 3x)^\circ$

Work out the value of x .
Show clear algebraic working.

$x =$

(3)

(b) Solve the inequality $2q - 5 \geq 31 - 3q$

.....
(2)

(Total for question = 5 marks)

Q6.

(a) Make h the subject of the formula $A = 2\pi r(r + h)$

$h =$
(2)

(b) Given the formula $s = ut + \frac{1}{2}at^2$

Find the value of s , given that $u = 2.3$, $t = -4.4$ and $a = 12$

Give your answer to 3 significant figures.

$s =$
(2)

(Total for question = 4 marks)

Q7.

Solve the simultaneous equations

$$\begin{aligned}4x + 5y &= 4 \\ 2x - y &= 9\end{aligned}$$

Show clear algebraic working.

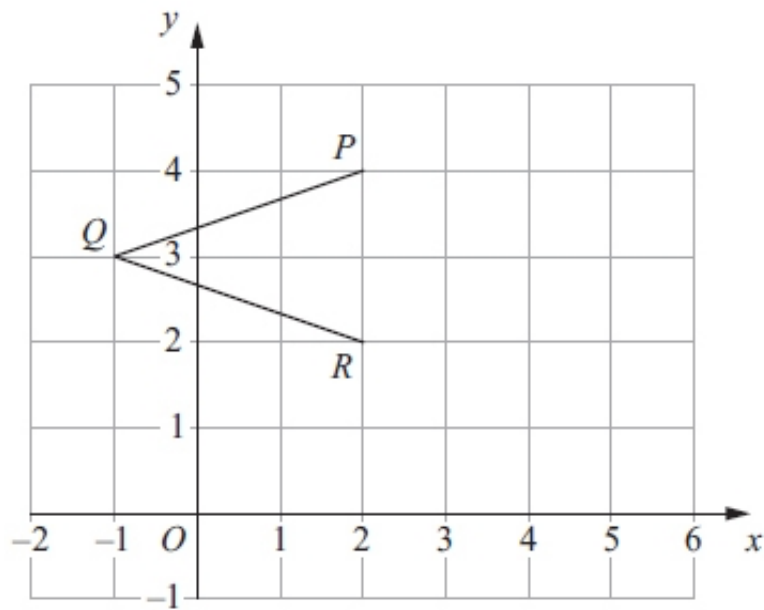
$$x = \dots\dots\dots$$

$$y = \dots\dots\dots$$

(Total for question = 3 marks)

Q8.

The diagram shows three points P , Q and R on a 1 cm grid.



(a) Write down the coordinates of P .

(.....,)
(1)

(b) Write down the coordinates of Q .

(.....,)
(1)

(c) On the grid, mark the point S so that $PQRS$ is a rhombus.

(1)

(d) Work out the area of the rhombus $PQRS$.

..... cm^2
(1)

(e) Write down the equation of the line PR .

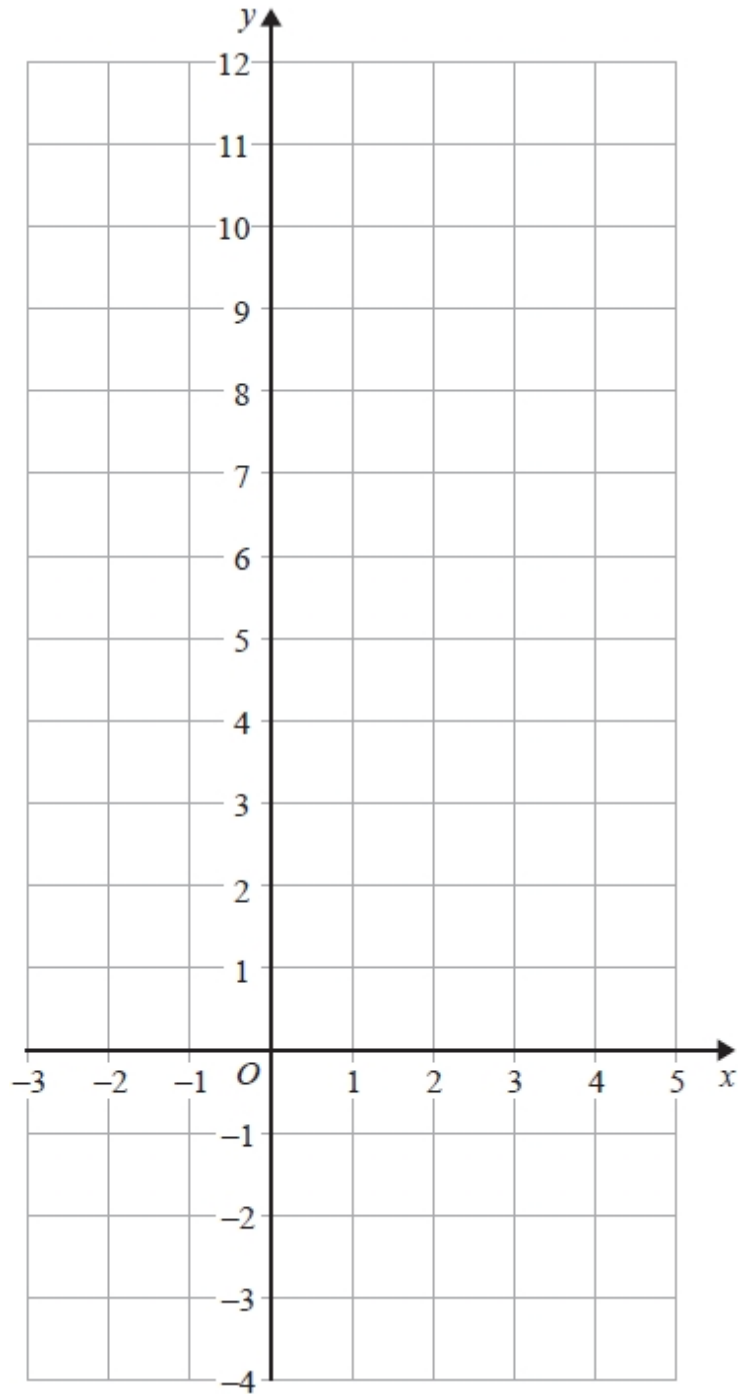
.....
(1)

(Total for question = 5 marks)

Q9.

On the grid, draw the graph of $y + 2x = 6$ for values of x from -2 to 4 .

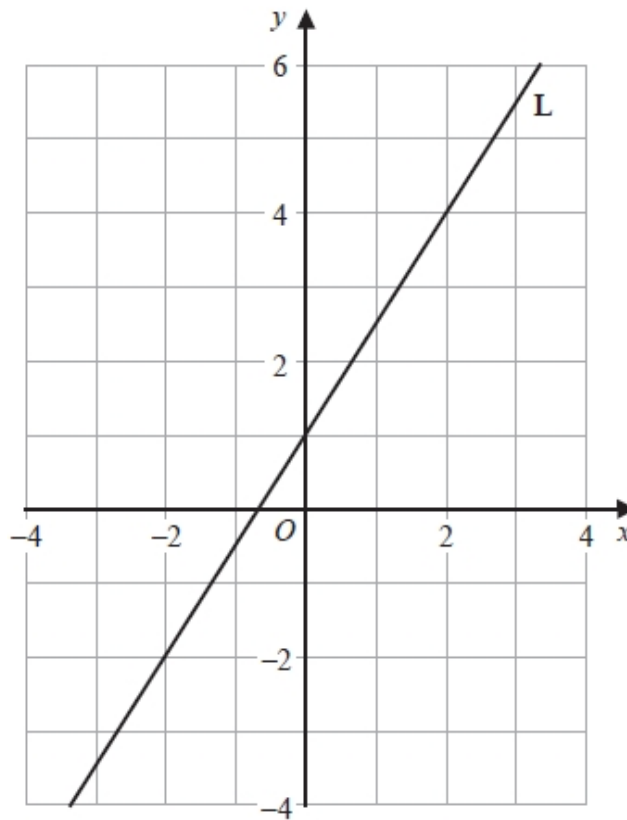
x							
y							



(Total for question = 4 marks)

Q10.

The line **L** is drawn on the grid.



Find an equation for **L**.

(Total for question = 3 marks)

Q11.

Factorise completely $(12x - y)^2 - (4x - 3y)^2$

.....
(Total for Question is 2 marks)

