Name: _____

GCSE Unit 9 Practice Assessment

Date:

Time: 45 minutes

Total marks available: 41

Total marks achieved: _____

Questions

Q1.

(a) (i) Factorise $x^2 - 12x + 27$

.....

(ii) Solve the equation $x^2 - 12x + 27 = 0$

.....

(3)

(b) Factorise $y^2 - 100$

.....

(1)

(Total for Question is 4 marks)

Q2.

Solve, by factorising, the equation $8x^2 - 30x - 27 = 0$

.....

(Total for Question is 3 marks)

Q3.

The expression $x^2 - 8x + 21$ can be written in the form $(x - a)^2 + b$ for all values of x.

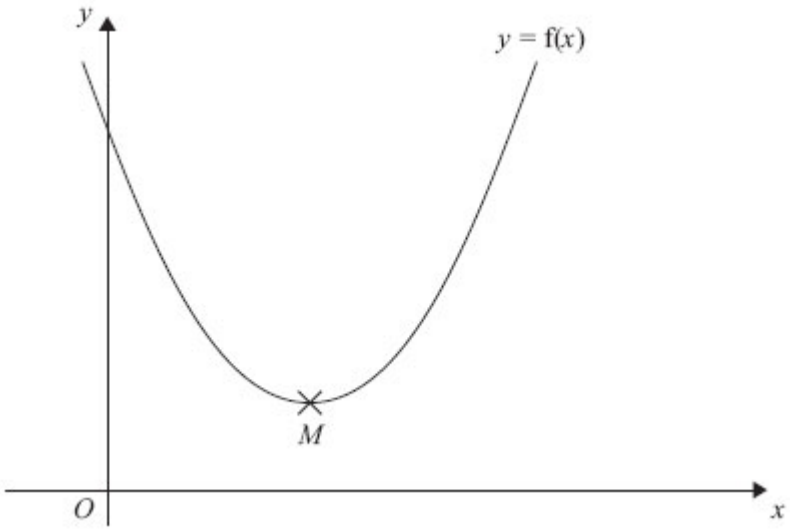
(a) Find the value of a and the value of b.

$a =$ . . . . . .
$b =$ . . . . . .

(3)

The equation of a curve is $y = f(x)$ where $f(x) = x^2 - 8x + 21$

The diagram shows part of a sketch of the graph of $y = f(x)$.



The minimum point of the curve is M.

(b) Write down the coordinates of M.

.....

(1)

(Total for Question is 4 marks)

Q4.

Solve the simultaneous equations

$$4x + y = 25$$
$$x - 3y = 16$$

$x =$ .....
$y =$ .....

(Total for Question is 3 marks)

Q5.

Solve the equations

$$x^2 + y^2 = 36$$
$$x = 2y + 6$$

.....

(Total for Question is 5 marks)

Q6.

A cinema sells adult tickets and child tickets.

The total cost of 3 adult tickets and 1 child ticket is £30
The total cost of 1 adult ticket and 3 child tickets is £22

Work out the cost of an adult ticket and the cost of a child ticket.

adult ticket £.....

child ticket £.....

(Total for question = 4 marks)

Q7.

Solve $3x^2 - 5x - 1 = 0$
Give your solutions correct to 3 significant figures.

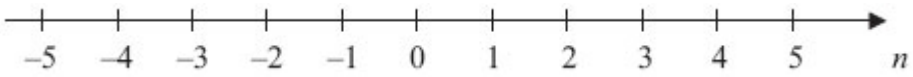
.....

(Total for question = 3 marks)

Q8.

$-2 < n \leq 3$

(a) Represent this inequality on the number line.



(2)

(b) Solve the inequality $8x - 3 \geq 6x + 4$

.....

(2)

(Total for Question is 4 marks)

Q9.

$3x + 5 > 16$

x is an integer.

Find the smallest value of x.

.....

(Total for Question is 3 marks)

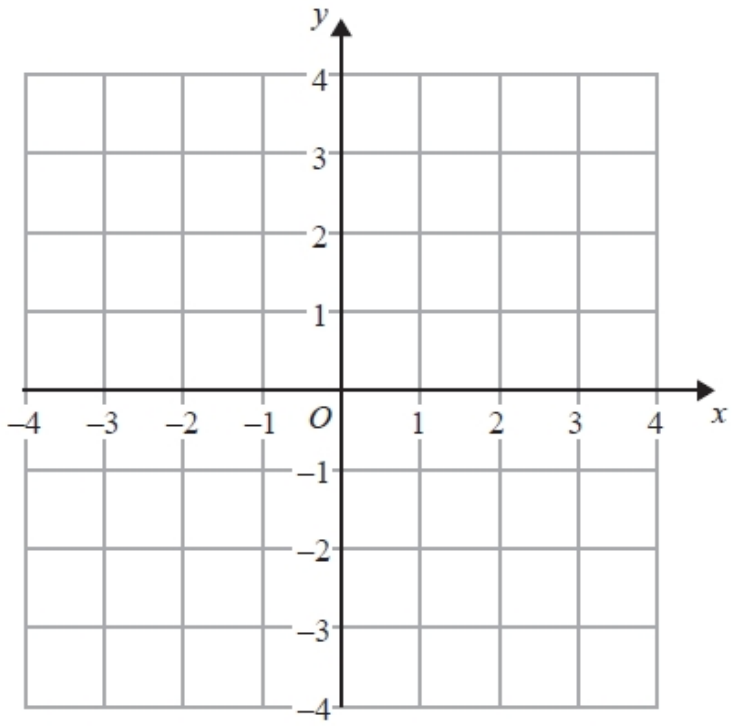
Q10.

(a) Solve the inequality $5e + 3 > e + 12$

.....

(2)

(b) On the grid, shade the region defined by the inequality $x + y > 1$



(2)

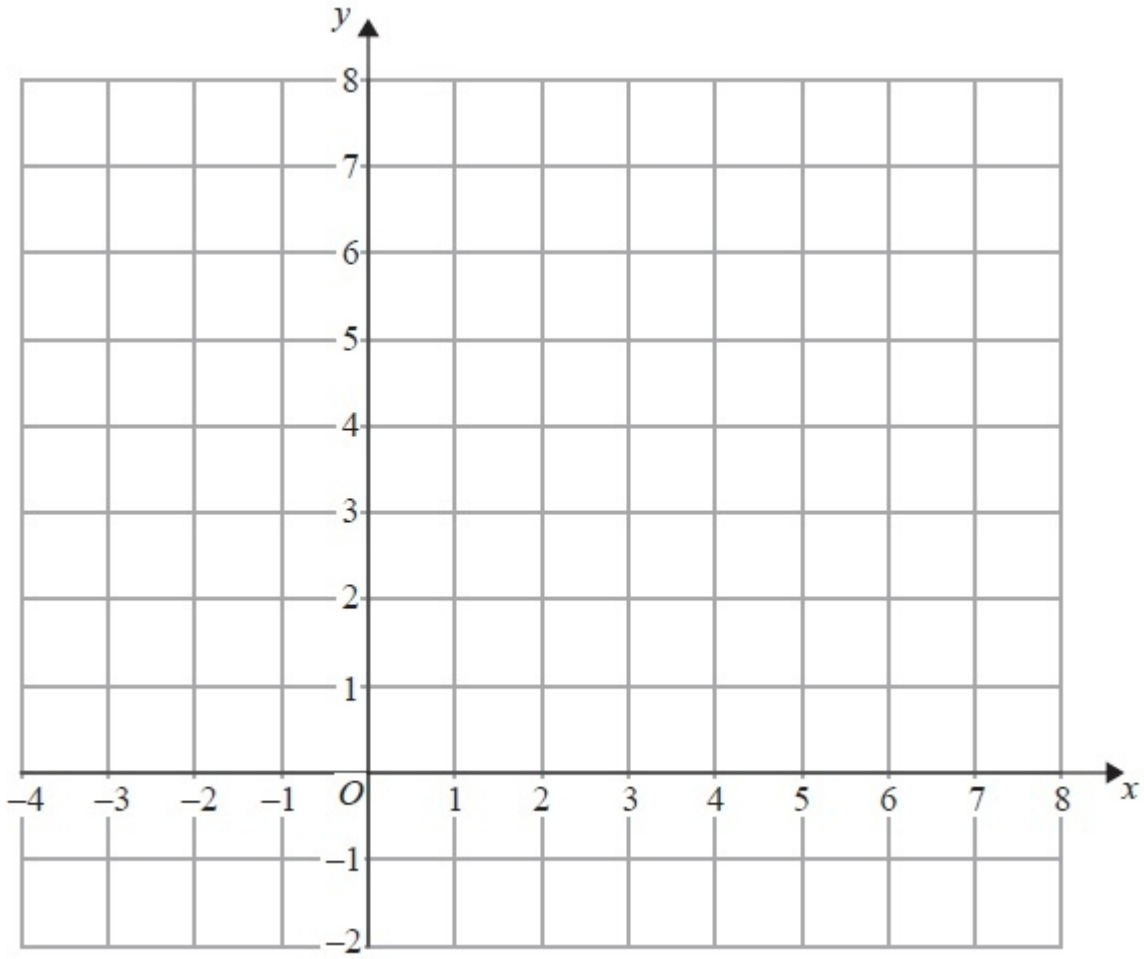
(Total for Question is 4 marks)

Q11.

On the grid below, show by shading, the region defined by the inequalities

$x + y < 6$ $x > -1$ $y > 2$

Mark this region with the letter R.



(Total for Question is 4 marks)