

## Question 1

## Question 11

(Suggested maximum time: 10 minutes)

- (a) Work out the value of  $12 - 3k^2$  when  $k = -2$ .

## Question 2

## Q2

Multiply out and simplify  $4x(5x + 4) - 3(x - 2)$ .

Factorise fully  $9 - 25y^2$ .

Question 3

**Question 12** (Suggested maximum time: 20 minutes)

**Question 12** (Suggested maximum time: 20 minutes)

- (a)** Factorise  $n^2 - 11n + 18$ .

- (b)** Factorise fully  $wy - y - 1 + w$ .

- (c)** Find the value of  $\frac{5}{3x-2} - \frac{7}{6x-12}$ , when  $x = 4$ .

Question 4

- (a)** Multiply out and simplify  $(x + 5)(x^2 - 2x + 6)$ .


Question 5

- (b)** Factorise each of the following expressions.

- (i)**  $25x^2 - 49n^2$

- (ii)  $2x^2 - 9x - 18$

Question 6

- 4. (a)**  Graph on the number line the solution set of

$$4-x \geq 2x-5, x \in \mathbb{N}.$$

## Question 7

### Question 8

(Suggested maximum time: 10 minutes)

- (a) Solve the following equation. Give each answer correct to two decimal places.

$$x^2 - 4x - 7 = 0$$



## Question 8

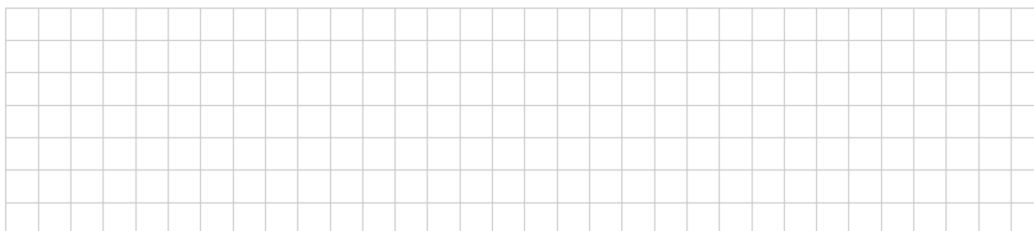
- (c) (i) Solve the simultaneous equations:

$$2x - 3y = 18$$

$$5x + 9y = -10.$$



- (ii) Verify your answer to (c)(i).

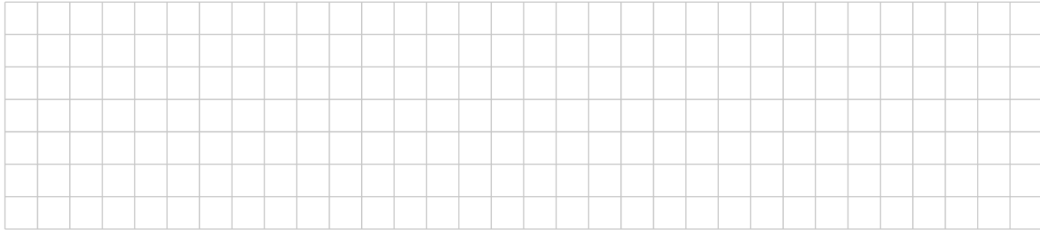


## Question 9

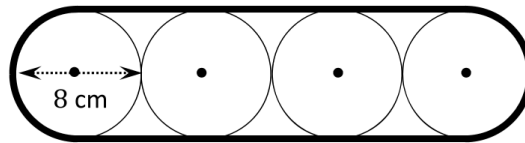
### Question 10

(Suggested maximum time: 10 minutes)

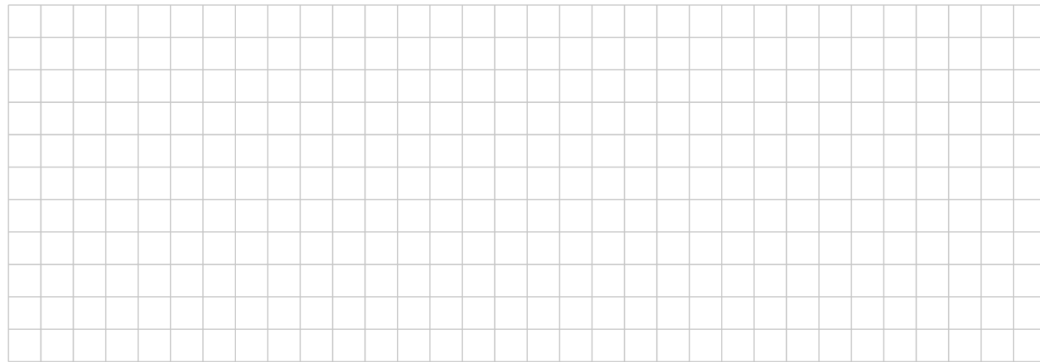
- (a) Work out the circumference of a circle with a **diameter** of 8 cm.  
Give your answer correct to one decimal place.



The rubber track for a toy digger goes around four circular wheels of diameter 8 cm, as shown.



- (b) Calculate the length of the rubber track that goes around the four wheels.  
Give your answer correct to one decimal place.



Every time the wheels turn fully, the digger travels a distance equal to one wheel's circumference.

- (c) Work out how many times each wheel will turn **fully** when the digger travels a distance equal to the length of its rubber track.

