

Revision A F3 (Topics 1-8) [34]

1.

(a) Factorise $10a + 5$

(1)

(b) Factorise $c^2 - 4c$

(2)

(Total 3 marks)

2.

Kris is x years old.

Jodie is 5 years younger than Kris.

Their combined ages add up to 41 years.

Form an equation in x and solve it to find Kris's age.

(Total 3 marks)

3.

(a) Copy and complete the table of values for $y = x^2 - 3$

x	-3	-2	-1	0	1	2	3
y		1	-2	-3	-2		6

(1)

(b) On a grid $-3 \leq x \leq 3$ (2cm = 1 unit), $-4 \leq y \leq 6$ draw the graph of $y = x^2 - 3$.

(2)

(c) Use the graph to solve $x^2 - 3 = 0$

(2)

(Total 5 marks)

4.

(a) You are given the formula $y = \frac{5+x}{x}$

Rearrange the formula to give x in terms of y .

(3)

(b) Simplify $(3xy^2)^4$.

(2)

(Total 5 marks)

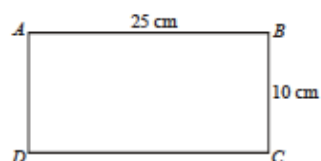
5.

Simplify fully $\frac{\sqrt{150} - \sqrt{6}}{\sqrt{12}}$

(Total 4 marks)

6.

$ABCD$ is a rectangle with length 25 cm and width 10 cm.



Not to scale

The length of the rectangle is increased by 10%.

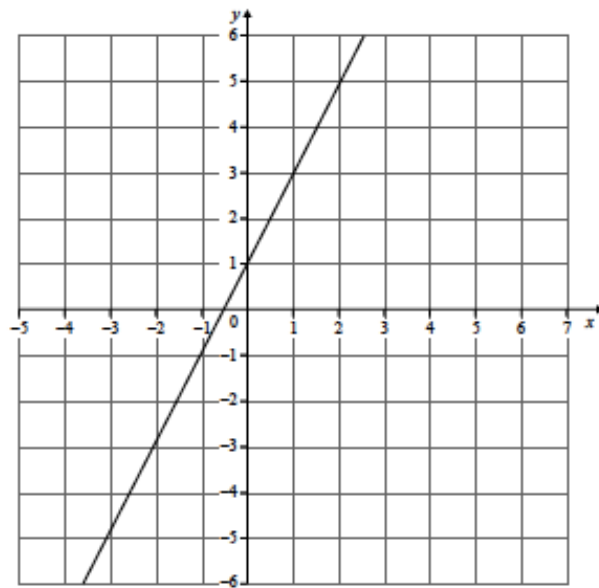
The width of the rectangle is increased by 20%.

Find the percentage increase in the area of the rectangle.

(Total 3 marks)

7.

The diagram shows the graph of $y = 2x + 1$.



A line passes through the point $(2, -3)$ and is perpendicular to $y = 2x + 1$.

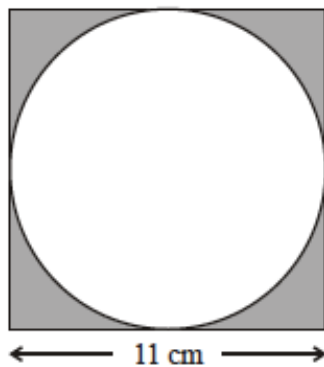
The equation of this line can be written in the form $ax + by = c$.

What are the values of a , b and c ?

(Total 3 marks)

8.

The diagram shows a circle which touches all four sides of a square.
The diameter of the circle is 11 cm.



Not drawn accurately

Calculate the total area of the shaded parts of the square.
Give your Answer to a suitable degree of accuracy.

(Total 4 marks)

9.

Non-calculator

Find the exact value of x in the right-angled triangle below.

(Total 4 marks)

