

Revision F3 (Topics 1-2) [35]

1.

Work out the value of $3x - 4y$ when $x = 3$ and $y = -2$

(Total 2 marks)

2.

(a) Work out $3\frac{1}{2} - 1\frac{4}{7}$

(3)

(b) Find the value of $\frac{\frac{1}{3} \times 9}{\frac{1}{8} \times (2)^2}$

(3)

(Total 6 marks)

3.

Expand and simplify

(a) $5(2x + 1) - 3(x - 4)$

(2)

(b) $(y - 4)(y - 2)$

(2)

(c) $(2t + 5)(2t - 5)$

(2)

(Total 6 marks)

4.

(a) Simplify

(i) $w^2 \times w^6$

(1)

(ii) $w^{10} \div w^4$

(1)

(iii) $(w^4)^3$

(1)

(b) If $x = 3^p$ and $y = 3^q$

Express in terms of x and/or y

(i) 3^{p-q}

(1)

(ii) 3^{2p}

(1)

(iii) 3^{q+2}

(1)

(Total 6 marks)

5.

Write 0.000068 in standard form.

(Total 1 mark)

6.

(a) Factorise $10p - 4$ (1)

(b) Factorise $q^2 + 3q$ (1)

(c) Factorise $r^2 - r$ (1)

(Total 3 marks)

7.

Prove algebraically that the recurring decimal $0.2\dot{5}$ has the value $\frac{23}{90}$

8.

(a) Work out $4 \times 10^7 \times 3 \times 10^4$

Give your answer in standard form.

(2)

(b) Work out $\frac{4 \times 10^9}{8 \times 10^5}$

Give your answer in standard form.

(3)

(Total 5 marks)

9.

A pattern of six coloured tiles is shown below.

Red	Red	Blue
Grey	Blue	Blue

Each tile is a square of side 10 cm.

(a) Jan has a rectangular wall, 2.4 m high and 2.7 m long.
She wants to repeat this pattern over her wall.

How many tiles of each colour does she need?

(b) Geoff has a rectangular wall, 2.4 m high and 3.7 m long.
He wants to use the same pattern.

Geoff says

I cannot use whole patterns to completely cover my wall.

Explain why Geoff is correct.

(Total 6 mark)