

Revision F3 (November Exam) [48]

1.

(a) Simplify $2a + 3b + 5a + b$ (2)

(b) Simplify $2p \times 4q$ (1)

(c) Expand and simplify $2(3x + 1) - 5(x - 2)$ (2)

(d) Simplify $6xy^2 \times x^2y^4$ (2)

(Total 7 marks)

2.

Work out $4\frac{1}{3} - 1\frac{2}{5}$

(Total 3 marks)

3. **Non-calculator**

The number of tissues in a packet is reduced by 20%.

The packet now contains 120 tissues.

How many tissues were there in a packet before the 20% reduction?

(Total 3 marks)

4.

(a) Factorise $4x - 12$ (1)

(b) Factorise $x^2 - 5x$ (1)

(Total 2 marks)

5.

Simplify

(a) $w^6 \times w^2$ (1)

(b) $x^3 \div x^5$ (1)

(c) $(v^3)^2$ (1)

(Total 3 marks)

6. (a) $D = 4r^2 + 17$. Work out the value of D when $r = -1$.

(b) Work out the value of r when $D = 65$. Express your answer in simplified form.

(Total 4 marks)

7.

Solve the following equations.

(a) $2x + 5 = 3$ (2)

(b) $4(y - 3) = 18$ (3)

(Total 5 marks)

8.

In 2000, a motorway was used by 70 000 vehicles each day.
Since 2000, the number of vehicles which used the motorway increased by 6% every year.

How many vehicles used the motorway each day in 2005?
Give your answer to an appropriate degree of accuracy.

(Total 4 marks)

9.

(a) Multiply 2.3×10^5 by 5×10^7

Give your answer in standard form.

(2)

(b) Divide 2.3×10^5 by 5×10^7

Give your answer in standard form.

(2)

(Total 4 marks)

10.

Jenny is organising a barbecue.
There are 30 bread rolls in a pack.
There are 16 sausages in a pack.
She needs **exactly** the same number of bread rolls as sausages.
What is the smallest number of each pack she must buy?
You **must** show all your working.

(Total 3 marks)

11.

To complete a task in 15 days a company needs
4 people each working for 8 hours per day.

The company decides to have
5 people each working for 6 hours per day.

Assume that each person works at the same rate.

(a) How many days will the task take to complete?
You **must** show your working.

[3 marks]

(b) Comment on how the assumption affects your answer to part (a).

[1 mark]

12.

(a) Which of these fractions can be written as recurring decimals?

$$\frac{1}{5} \quad \frac{1}{6} \quad \frac{5}{8} \quad \frac{2}{3}$$

(2)

(b) Express $\frac{2}{9}$ as a recurring decimal.

(1)

(c) Prove that $0.15\dot{4}$ is equal to $\frac{17}{110}$

(3)

(Total 6 marks)