

1 (a) Simplify fully $\frac{9m}{12m}$

[2 marks]

$$\frac{9 \div 3}{12 \div 3} = \frac{3}{4}$$

Answer $\frac{3}{4}$ (2)

2 (a) Lucy wants to simplify $6a - (7b - 2a)$

She writes $4a - 7b$

Is she correct?

Tick a box.

☐

Yes

☒

No

Give a reason for your answer.

[1 mark]

$\therefore 6a - 7b + 2a$

$\therefore 8a - 7b$ (1)

2 (b) Lucy also wants to simplify $3p^2 \times 5p^7$

She says,

“Add 3 and 5, then add 2 and 7”

Her answer is $8p^9$

Tick a box for each part of her method.

[1 mark]

Correct

Not correct

Add 3 and 5

☐
☒

Add 2 and 7

☒
☐

(1)

2 (c) Lucy thinks of a number.

$$10 \times \text{the number} = 10 \div \text{the number}$$

Give a possible value of the number.

[1 mark]

$$\text{Let number} = n \quad 10n = \frac{10}{n}$$

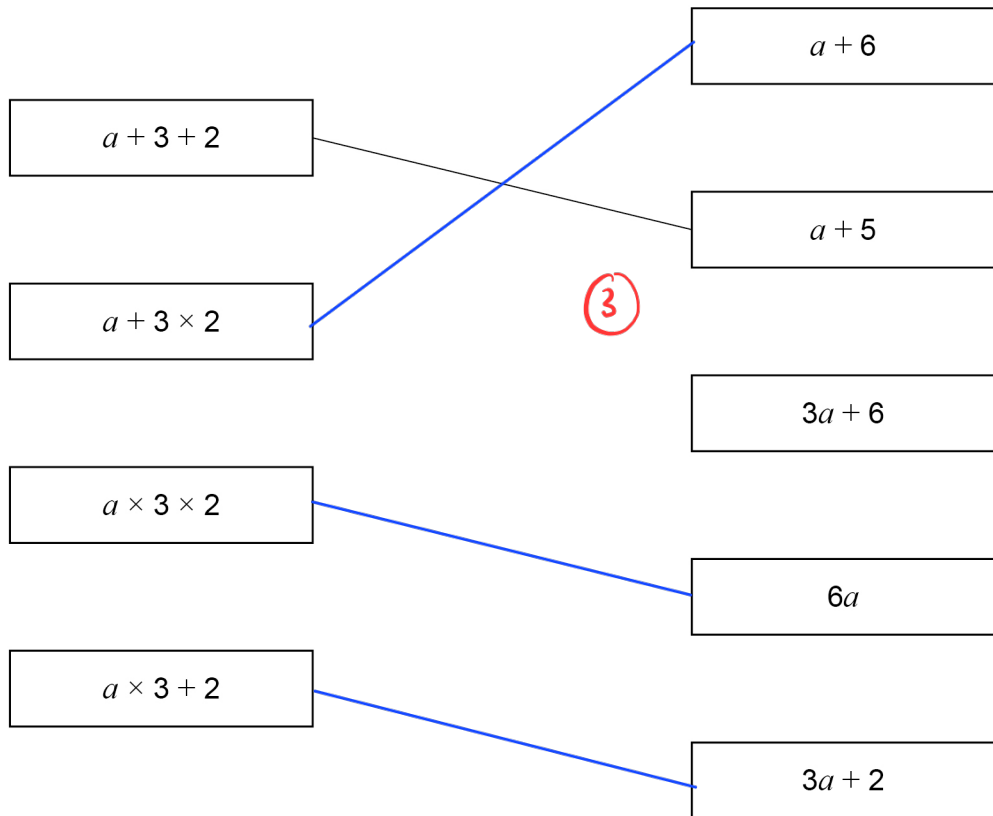
$$n^2 = 1$$

$$n = \pm 1$$

Answer 1 or -1 1

3

Match each expression on the left with one on the right.
One has been done for you.

[3 marks]

4

Simplify $4 \times 2c = 8c$

Circle your answer.

[1 mark]

$42c$

$16c$

$8c$

1

$6c$

5 (a) Simplify fully $9x + y - 6x + y$

[2 marks]

$$9x - 6x + y + y$$

$$= 3x + 2y$$

Answer $3x + 2y$ (2)

5 (b) Here are two expressions.

$$8a$$

$$a^2 - b$$

When $a = 25$ the expressions have the same value.

Work out the value of b .

[3 marks]

$$8(25) = 200 \quad (1)$$

$$a^2 - b = 200$$

$$25^2 - b = 200$$

$$625 - b = 200 \quad (1)$$

$$b = 625 - 200 = 425$$

$$b = 425$$

5 (c) Simplify $\frac{6w+10}{2}$ = $3w+5$

Circle your answer.

[1 mark]

$6w + 8$

$3w + 10$

$6w + 5$

$3w + 5$

1

6 (a) Simplify fully $p^2 \times p$

[1 mark]

$$p^{2+1} = p^3$$

Answer p^3 ①

6 (b) Simplify fully $3a + 5c - a + 6c$

[2 marks]

$$3a - a + 5c + 6c$$

$$= 2a + 11c$$
 ②

Answer $2a + 11c$

7 Simplify fully $8a + 5b + 6a - 2b$

[2 marks]

$$8a + 6a + 5b - 2b$$

$$= 14a + 3b$$

Answer $14a + 3b$ (2)

- 8 Emma tries to simplify $cd \times 2$
Here is her method.

$$\begin{aligned}c \times 2 &= 2c \\d \times 2 &= 2d \\2c \times 2d &= 4cd\end{aligned}$$

What is wrong with her method?

[1 mark]

She has multiplied by 2 twice ①

9 (a) Simplify fully $d \times d$ $d^{1+1} = d^2$

[1 mark]

Answer d^2 ①

9 (b) Simplify fully $n \div n$ $n^{1-1} = n^0 = 1$

[1 mark]

Answer 1 ①

9 (c) Simplify fully $\frac{1}{3} \times 6t$ $\frac{6t}{3} = 2t$

[1 mark]

Answer $2t$ ①

10 (a) Simplify fully $x + 4x$

[1 mark]

Answer 5x ✓ ①

10 (b) Simplify fully $5 \times 2w = (5 \times 2)w$
 $= 10w$

[1 mark]

Answer 10w ✓ ①

10 (c) Simplify fully $2m \div m = 2 \left(\frac{m}{m} \right) = 2$

[1 mark]

Answer 2 ✓ ①

10 (d) Simplify fully $y \times y \times y = y^{1+1+1} = y^3$

[1 mark]

Answer y³ ✓ ①