AQA - Algebra – GCSE 2022 Mathematics

1. June/2022/Paper_8300/3F/No.4

Simplify $4 \times 2c$

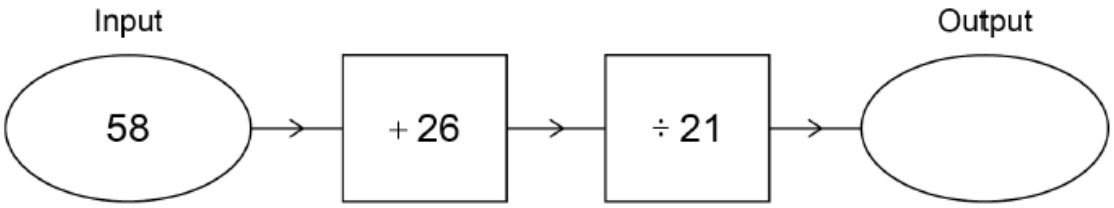
Circle your answer.

[1 mark]

$42c$ $16c$ $8c$ $6c$

2. June/2022/Paper_8300/3F/No.11

(a) Here is a number machine.

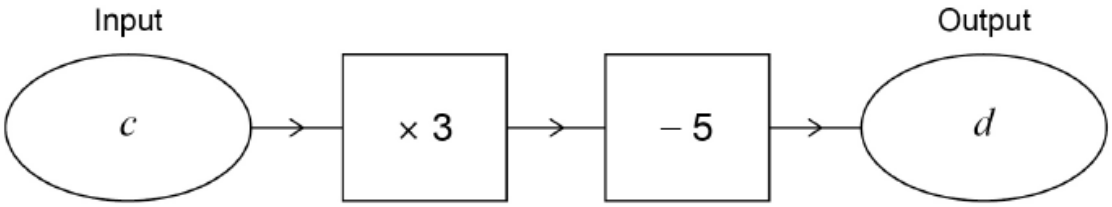


Work out the output.

[1 mark]

Answer _____

(b) Here is a different number machine.



Work out a formula for d in terms of c.

[2 marks]

Answer _____

3. June/2022/Paper_8300/3F/No.12

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

[2 marks]

Answer _____

(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]

$b =$ _____

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

Circle your answer.

[1 mark]

$6w + 8$ $3w + 10$ $6w + 5$ $3w + 5$

4. June/2022/Paper_8300/3H/No.13

Simplify $\sqrt{5}\,a + \sqrt{5}\,a$

Circle your answer.

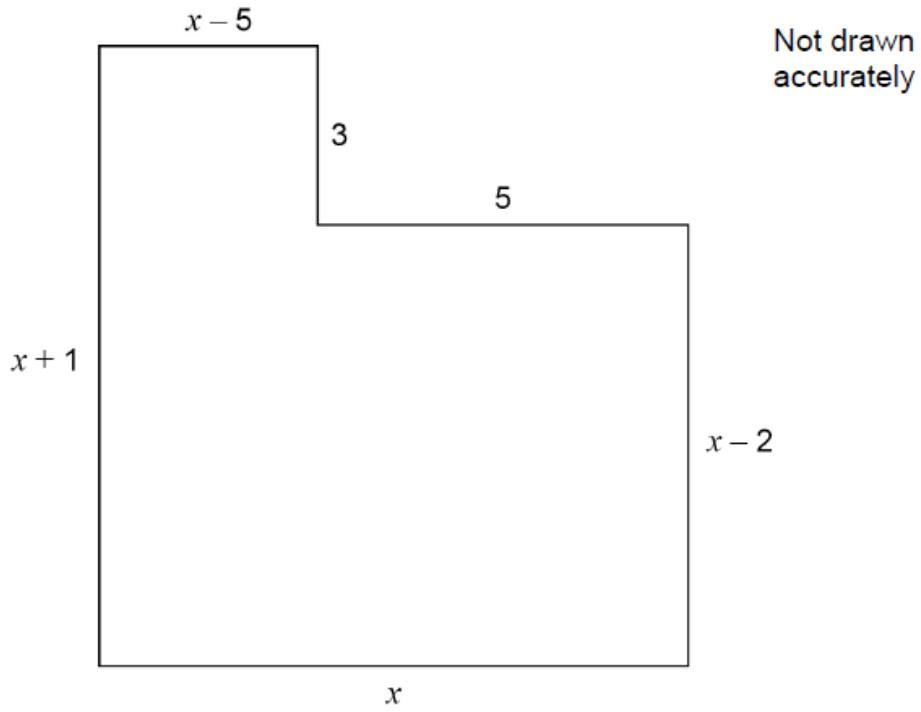
[1 mark]

$5a$ $5a^2$ $2\sqrt{5}\,a$ $\sqrt{10}\,a$

5. June/2022/Paper_8300/3H/No.19

Here is the plan of the floor of an L-shaped room.

All lengths are in metres.



Not drawn accurately

(a) The area of the floor is $75\,m^2$

Show that $x^2 + x - 90 = 0$

[3 marks]

(b) By factorising $x^2 + x - 90$ work out the value of x.

You **must** show your working

[2 marks]

$x =$ _____

6. June/2022/Paper_8300/3H/No.22

$f(x) = 3x$ and $g(x) = x^2$

Circle the expression for $fg(x)$

[1 mark]

$3x^2$ $9x^2$ $3x^3$ $9x^4$

7. June/2022/Paper_8300/3H/No.23

Here are two simultaneous equations.

$$y = x^2 + 7x - c$$

and

$$y = 3x + d$$

There is a solution when $x = 5$

Work out the value of $c + d$

[3 marks]

Answer _____

8. June/2022/Paper_8300/3H/No.27

Expand and simplify fully $(x-3)(x-4)(x+8)$

[3 marks]

Answer _____