Substitution

ANSWERS

1

Work out the value of $3a + 2b$ when $a = 5$ and $b = 4$.

$= 3(5) + 2(4)$

$= 15 + 8$

Answer 23

2

Work out the value of $6x - y$ when $x = 3$ and $y = -2$.

$= 6(3) - (-2)$

$= 18 - (-2)$

$= 18 + 2$

Answer 20

3

Work out the value of $x^2 + 5y$ when $x = -4$ and $y = 2$.

$= (-4)^2 + 5(2)$

$= 16 + 10$

Answer 26

4

Work out the value of $4p - 3q$ when $p = -2$ and $q = -5$.

$= 4(-2) - 3(-5)$

$= -8 - (-15)$

$= -8 + 15$

Answer 7

5

Work out the value of $2t^2 - 3$ when $t = -3$.

$= 2(-3)^2 - 3$

$= 2 \times 9 - 3$

$= 18 - 3$

Answer 15

6

Mia works out $a^2 + 10$ when $a = -6$. She writes $-6^2 + 10 = -26$. What has she done wrong? Work out the right answer.

She squared only the 6

$(-6)^2 + 10 = 36 + 10$

Answer 46

7

$v = u + at$. Work out v when $u = 15$, $a = -2$ and $t = 6$.

$v = (15) + (-2) \times (6)$

$v = 15 - 12$

Answer 3

8

The cost, C pounds, of a bowling lane for n people is $C = 12 + 6n$. Work out the cost for 5 people.

$C = 12 + 6(5)$

$C = 12 + 30$

Answer £42

Substitution *further practice*

ANSWERS

9

Work out the value of $5m - 2n$ when $m = -3$ and $n = -4$.

$= 5(-3) - 2(-4)$

$= -15 + 8$

Answer -7

10

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

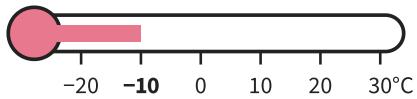
$= 3(2 - (-4))$

$= 3 \times 6$

Answer 18

11

To change degrees Celsius, C, to degrees Fahrenheit, F, use $F = 1.8C + 32$. Find F when $C = -10$.



$F = 1.8 \times (-10) + 32$

$F = -18 + 32$

Answer $14\ °F$

12

Work out the value of $a^2 - b^2$ when $a = -6$ and $b = 4$.

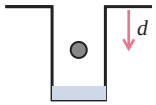
$= (-6)^2 - (4)^2$

$= 36 - 16$

Answer 20

13

A stone is dropped down a well. After t seconds it has fallen d metres, where $d = 5t^2$. How far has it fallen after 3 seconds?



$d = 5(3)^2$

$d = 5 \times 9$

Answer $45\ m$

14

When $k = -4$, Amy works out $2k^2$ and Ben works out $(2k)^2$. Who gets the bigger answer, and by how much?

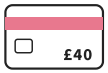
$2(-4)^2 = 32$

$(2 \times (-4))^2 = 64$

Answer Ben, by 32

15

Leah puts £40 on a travel card and spends £15 a week. After w weeks the balance, B pounds, is $B = 40 - 15w$.
Work out B when $w = 4$.
What does your answer mean?



$B = 40 - 15(4) = -20$

She is £20 short

Answer -20, £20 short

16

Kai says $5 - 2x$ is always less than 5.
Is he right? Explain your answer.

When $x = -1$: $5 - 2(-1) = 7$

7 is more than 5

Answer No