

Week 16

Monday 6th July 2020

**Year 6 Finding Pairs of Value - Reasoning
and Problem Solving**

Substitution

1a.

$$d = 2e + 50$$

$$f = d - 17$$

Hafsa says:



If $e = 7$ then $f = 47$.

Is she correct?

Explain your answer.



6 R

Substitution

1b.

$$d = 2e$$

$$f = 9 + d$$

Will says:



If $e = 12$ then $f = 3$.

Is he correct?

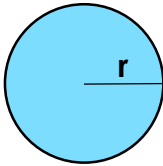
Explain your answer.



6 R

2a. Jordan is calculating the diameter of a circle.

He is using the equation $d = 2r$.



He calculates that $d = 20\text{cm}$.

What is the value of r ?

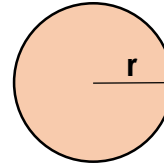


Not to scale

6 PS

2b. Millie is calculating the diameter of a circle.

She is using the equation $d = 2r$.



She calculates that $d = 8\text{cm}$.

What is the value of r ?



Not to scale

6 PS

3a. True or false?

$$e = 2f - 15$$

When $f = 20$, $e = 5$.

Explain your answer.



6 R

3b. True or false?

$$e = f + 100$$

When $f = 250$, $e = 350$.

Explain your answer.



6 R

Substitution

4a.

$$a = 3b - 4$$

$$c = a + 10$$

Evie says:



If $b = 5$ then $c = 20$.

Is she correct?

Explain your answer.



6 R

Substitution

4b.

$$a = 10b \div 2$$

$$c = 25 + a$$

Jaxon says:



If $b = 0.5$ then
 $c = 15$.

Is he correct?

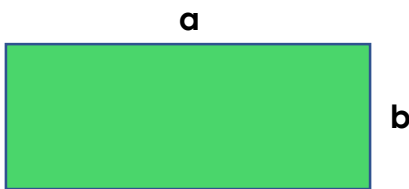
Explain your answer.



6 R

5a. Jaiden is calculating the perimeter of a rectangle.

He is using the equation $P = 2a + 2b$.



When $a = 6.5\text{cm}$, he calculates that $P = 19\text{cm}$.

What is the value of b ?

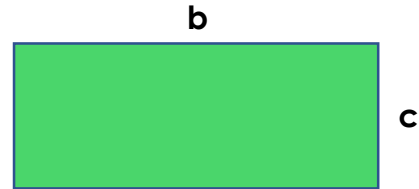


Not to scale

6 PS

5b. Sophia is calculating the area of a rectangle.

She is using the equation $A = b \times c$.



When $b = 12\text{cm}$, she calculates that $A = 60\text{cm}^2$.

What is the value of c ?



Not to scale

6 PS

6a. True or false?

$$a = bc - 5$$

When $b = 10$ and $c = 9$,
 $a = 14$.

Explain your answer.



6 R

6b. True or false?

$$a = (b - 10c) \times 11$$

When $b = 25$ and $c = 2.5$,
 $a = 11$.

Explain your answer.



6 R

Substitution

7a.

$$x = (y^2 \div 10) + 1.25$$
$$z = x + 10$$

Lucy says:



If $y = 9$ then
 $z = 19.5$.

Is she correct?

Explain your answer.



6 R

Substitution

7b.

$$x = 55 \div 8y$$
$$z = 0.25 + 4x$$

Harry says:



If $y = \frac{1}{4}$ then
 $z = 220.25$.

Is he correct?

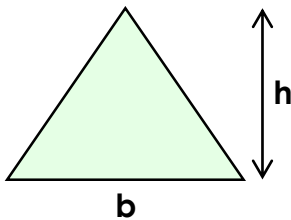
Explain your answer.



6 R

8a. Yusuf is calculating the area of a triangle.

He is using the equation $A = \frac{1}{2} b \times h$.



When $b = 12\text{cm}$, he calculates that
 $A = 66\text{cm}^2$.

What is the value of h ?

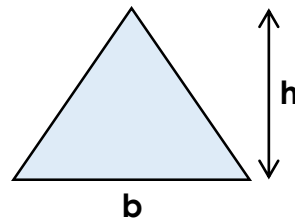


Not to scale

6 PS

8b. Jade is calculating the area of a triangle.

She is using the equation $A = \frac{1}{2} b \times h$.



When $b = 22\text{cm}$, he calculates that
 $A = 132\text{cm}^2$.

What is the value of h ?



Not to scale

6 PS

9a. True or false?

$$x = 100y \div (z - 2.5)$$

When $y = 0.55$ and $z = 13.5$,
 $x = 0.5$.

Explain your answer.



6 R

9b. True or false?

$$x = (y^3 \times 5) - 4z$$

When $y = 2$ and $z = 8.5$,
 $x = -4$.

Explain your answer.



6 R