Substitution

7a. Lucy is looking at the values below:

$$a = (b^2 \div 10) + 1.25$$

$$c = a + 10$$

She says,



If $b = 9$ then $c = 19.5$.

Is she correct?

Explain your answer.

GD R

Substitution

7b. Harry is looking at the values below:

$$a = 55 \div 8b$$

$$c = 0.25 + 4a$$

He says,



If $b = \frac{1}{4}$ then $c = 220.25$

Is he correct?

Explain your answer.

GD R

8a. Use the equation below to work out the value of a and b.

$$a = 8b \div 2$$

$$b = 6 \times 1\frac{1}{3} + 3$$

$a =$ ☐ $b =$ ☐

GD PS

8b. Use the equation below to work out the value of a and b.

$$a = 2b \times 3$$

$$b = 17 - 12 \times 1\frac{1}{2}$$

$a =$ ☐ $b =$ ☐

GD PS

9a. True or false?

$$a = 100b \div (c - 2.5)$$

When $b = 0.55$ and $c = 13.5$,
$a = 0.5$

Explain your answer.

GD R

9b. True or false?

$$a = (b^3 \times 5) - 4c$$

When $b = 2$ and $c = 8.5$,
$a = -4$

Explain your answer.

GD R

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Reasoning and Problem Solving Substitution

Developing

1a. Yes; $d = 14 + 5 = 19$, so $f = 19 - 2 = 17$

2a. $a = 1$; $b = 7$

3a. False; $2f = 40$, so $e = 40 - 15 = 25$

Expected

4a. No; $a = 15 - 4 = 11$, so $c = 11 + 10 = 21$

5a. $a = 44$; $b = 24.5$

6a. False; $a = (10 \times 9) - 5$, so $90 - 5 = 85$

Greater Depth

7a. No; $a = (81 \div 10) + 1.25 = 9.35$, so $c = 9.35 + 10 = 19.35$

8a. $a = 44$; $b = 11$

9a. False; $a = 55 \div 11 = 5$

Reasoning and Problem Solving Substitution

Developing

1b. No; $d = 2 \times 12 = 24$, so $f = 9 + 24 = 33$

2b. $a = 30$; $b = 14$

3b. True; $e = 25 + 10 = 35$

Expected

4b. No; $a = 5 \div 2 = 2.5$, so $c = 25 + 2.5 = 27.5$

5b. $a = 19$; $b = 4$

6b. False; $a = (25 - 25) \times 11$, so $0 \times 11 = 0$

Greater Depth

7b. No; $a = 55 \div 2 = 27.5$, so $c = 0.25 + 110 = 110.25$

8b. $a = -6$; $b = -1$

9b. False; $a = (8 \times 5) - 34 = 6$

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