Find Pairs of Values 2

7a. Gillian is finding possible values for x and y.

$$7x + 2y = 12.5$$



If x equals $\frac{1}{2}$, y must equal 5.5.

Is Gillian correct? Explain your answer.

GD R

7b. Faisan is finding possible values for a and b.

$$2a - 5b = -5$$



If a equals 2.5, b must equal 10.

Is Faisan correct? Explain your answer.

GD R

8a. If a is a negative number and b is 7, which of these could be true?

A. $a + b = 0$

B. $a + 3b = 16$

C. $a + 8b = 46$

D. $a + 2b - b = 3$

Convince me.

GD R

8b. If a is -5 and b is a decimal number, which of these could be true?

A. $a + b = -2.5$

B. $a + 3b = -3.5$

C. $a + 2b - b = 5.5$

D. $a - b = -9.5$

Convince me.

GD R

9a. CinePlaza sell 2 medium popcorn and 2 small popcorn for £17.50. What possible prices can you find for each popcorn?

$$2m + 2s = £17.50$$

m	s

GD PS

9b. Warm Wear sell 5 mittens and 5 hats for £22.50. What possible prices can you find for each item?

$$5m + 5h = £22.50$$

m	h

GD PS

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Reasoning and Problem Solving
Find Pairs of Values 2

Developing

1a. Katya is incorrect because 2 x 7 = 14; 14 + 4 = 18 so d = 4 not 5.

2a. A, C or D could be true. For example: A. a = 5; C. a = 3; D. a = 5

3a. Various answers, for example: m = 6, s = 4; m = 7, s = 2; m = 5, s = 6

Expected

4a. Vivian is incorrect because 5 x 7 = 35; 50 – 35 = 15. 15 ÷ 3 = 5 so i = 5.

5a. A or D could be true. For example: A. a = 15; B. a = 7

6a. Various answers, for example: m = 30, s = 10; m = 40, s = 5; m = 10, s = 20

Greater Depth

7a. Gillian is incorrect because 7 x $\frac{1}{2}$ = 3.5; 12.5 – 3.5 = 9. 9 ÷ 2 = 4.5 so y = 4.5.

8a. A, B, C or D could be true. For example: A. a = -7; B. a = -5; C. a = -10; D. a = -4

9a. Various answers, for example: m = 5, s = 3.75; m = 6, s = 2.75; m = 4, s = 4.75

Reasoning and Problem Solving
Find Pairs of Values 2

Developing

1b. Jesse is incorrect because 2 x 10 = 20; 20 – 8 = 12 so d = 8 not 2.

2b. B or C could be true. For example: B. b = 6; C. b = 2

3b. Various answers, for example: k = 4, b = 5; k = 3, b = 6; k = 7, b = 2

Expected

4b. Ralph is incorrect because 2 x 15 = 30; 40 – 30 = 10. 10 ÷ 5 = 2 so y = 2.

5b. B, C or D could be true. For example: B. a = 10; C. a = 8; D. a = 6

6b. Various answers, for example: s = 10, l = 20; s = 5, l = 30; s = 11, l = 18

Greater Depth

7b. Faisan is incorrect because 2 x 2.5 = 5; 5 – 10 = -5. 10 ÷ 5 = 2 so b = 2.

8b. A, B, C or D could be true. For example: A. b = 2.5; B. b = 0.5; C. b = 10.5; D. b = 4.5

9b. Various answers, for example: m = 1, h = 3.5; m = 2, h = 2.5; m = 3, h = 1.5

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