

Wednesday 10th June

Year 5/6: Find Pairs of Values

Introduction

If $a = 5$, find two possibilities for b if the answer is greater than 5 and less than 8.

$$2a \quad \times \quad b \quad = \quad ?$$

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$$10 \quad \times \quad 0.6 \quad = \quad 6$$

$$10 \quad \times \quad 0.7 \quad = \quad 7$$

Varied Fluency 1

Match the pairs of numbers to the equations.

$$6\frac{3}{4} + 7\frac{1}{2}$$

$$21 \times 3$$

$$41 \times 5$$

$$24 + 51$$

$$c \times d = 205$$

$$c + d = 75$$

$$c + d = 14.25$$

$$c \times d = 63$$

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Varied Fluency 2

True or false?

$$r \div s = 6$$

$$r = 90, s = 15$$

Varied Fluency 2

True or false?

$$r \div s = 6$$

$$r = 90, s = 15$$

True

Varied Fluency 3

Which of the options fit the equation?

$$n \times m = 168$$

A. $n = 100$ $m = 1.5$

B. $n = 12$ $m = 14$

C. $n = 3.2$ $m = 52.5$

D. $n = 10$ $m = 17$

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Varied Fluency 4

Find three possible variables for x and y .

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Both numbers must be less than 20.

Varied Fluency 4

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$$2x - y = 5.5$$

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Various possible answers, for example:

$x = 5, y = 4.5$; $x = 6, y = 6.5$; $x = 7, y = 8.5$

Reasoning 1

Francesca writes the following equation:

$$2a + b = 48$$

She writes three possible pairs in her book:

A. $a = 10, b = 28$

B. $a = 15, b = 18$

C. $a = 12, b = 36$

Which is the odd one out? Explain your answer.

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C because...

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Which is the odd one out? Explain your answer.

C because $2 \times 12 + 36 = 60$.

Problem Solving 1

What pair of values have been used in the following equations if the values are always the same?

$$a + b$$

=

$$8.5$$

$$a \times b$$

=

$$1.66$$

$$a \div b$$

=

$$41.5$$

$$a - b$$

=

$$8.1$$

Problem Solving 1

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$$a \div b$$

=

$$41.5$$

$$a - b$$

=

$$8.1$$

$$a = 8.3; b = 0.2$$

Reasoning 2

Martin is finding pairs for the equation below.

$$a - b = 5.6$$

He says,



Both values must be a decimal because the answer is a decimal.

Is Martin correct? Explain why.

Reasoning 2

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He says,



Both values must be a decimal because the answer is a decimal.

Is Martin correct? Explain why.

No, because...

Reasoning 2

Martin is finding pairs for the equation below.

$$a - b = 5.6$$

He says,



Both values must be a decimal because the answer is a decimal.

Is Martin correct? Explain why.

No, because only one of the values needs to be a decimal for the answer to be a decimal.

Year 5 and Year 6 Developing

1a. Match the pairs of numbers to the equations.

$$14 + 22$$

$$c \times d = 26$$

$$13 \times 2$$

$$c - d = 49$$

$$89 - 36$$

$$c + d = 36$$

$$134 - 85$$

$$c - d = 53$$



6 VF

1b. Match the pairs of numbers to the equations.

$$40 + 11$$

$$c + d = 112$$

$$2 \times 31$$

$$c - d = 33$$

$$78 - 45$$

$$c + d = 51$$

$$44 + 68$$

$$c \times d = 62$$



6 VF

2a. True or false?

$$r \times s = 160$$

$$r = 8, s = 2$$



6 VF

2b. True or false?

$$c \times d = 56$$

$$r = 7, s = 8$$



6 VF

3a. Which of the options fit the equation?

$$n - m = 13$$

A. $n = 28$ $m = 15$

B. $n = 22$ $m = 10$

C. $n = 30$ $m = 17$

D. $n = 16$ $m = 2$



3b. Which of the options fit the equation?

$$p + q = 50$$

A. $p = 12$ $q = 38$

B. $p = 19$ $q = 29$

C. $p = 15$ $q = 45$

D. $p = 11$ $q = 39$



2a. What pair of values have been used in the following equations if the values are always the same?

$$\begin{array}{lcl} a + b & = & 18 \\ a \times b & = & 32 \\ a - b & = & 14 \end{array}$$



6 PS

2b. What pair of values have been used in the following equations if the values are always the same?

$$\begin{array}{lcl} a \times b & = & 100 \\ a - b & = & 48 \\ a + b & = & 52 \end{array}$$



6 PS

3a. Richard is finding pairs for the equation:

$$a - b = 89$$

He says,



One value must be a 2-digit number because the answer is less than 100.

Is Richard correct? Explain why.

3b. Saima is finding pairs for the equation

$$a + b = 36$$

She says,



One value must be a 2-digit number because the answer is a two digit number.

Is Saima correct? Explain why.

Year 6 Expected

5a. Match the pairs of numbers to the equations.

$$2.25 + 3.25$$

$$c \times d = 36$$

$$76 + 3.5$$

$$c + d = 5\frac{1}{2}$$

$$12 \times 3$$

$$c + d = 79.5$$

$$16 \times 6$$

$$c \times d = 96$$



6 VF

5b. Match the pairs of numbers to the equations.

$$8.2 - 6.5$$

$$c + d = 57$$

$$9 \times 18$$

$$c - d = 58$$

$$97 - 39$$

$$c - d = 1.7$$

$$32 + 25$$

$$c \times d = 162$$



6 VF

6a. True or false?

$$a \times b = 2.4$$

$$a = 2, b = 1.4$$



6 VF

6b. True or false?

$$c + d = 16.8$$

$$c = 9.6, d = 7.2$$



6 VF

7a. Which of the options fit the equation?

$$m - n = 46$$

A. $m = 82.4$ $n = 36.4$

B. $m = 12$ $n = 35$

C. $m = 72$ $n = 32$

D. $m = 75.7$ $n = 29.7$



6 VF

7b. Which of the options fit the equation?

$$p + q = 24$$

A. $p = 6$ $q = 16$

B. $p = 18$ $q = 6$

C. $p = 13.8$ $q = 10.2$

D. $p = 6$ $q = 4$



6 VF

4a. Elodie writes the following equation:

$$2a + b = 72$$

She writes three possible pairs in her book:

A. $a = 20, b = 32$

B. $a = 30, b = 12$

C. $a = 31, b = 11$

Which is the odd one out? Explain your answer.



6 R

4b. Daley writes the following equation:

$$3a + b = 22$$

He writes three possible pairs in his book:

A. $a = 6, b = 4$

B. $a = 8, b = 2$

C. $a = 5, b = 7$

Which is the odd one out? Explain your answer.



6 R

5a. What pair of values have been used in the following equations if the values are always the same?

$a + b$	=	7.5
$a \times b$	=	9
$a \div b$	=	4
$a - b$	=	4.5



5b. What pair of values have been used in the following equations if the values are always the same?

$a + b$	=	15.2
$a \times b$	=	38.4
$a \div b$	=	3.75
$a - b$	=	8.8



Year 6 Greater Depth

9a. Match the pairs of numbers to the equations.

$$-18 + 31$$

$$c - d = 11.1$$

$$23.2 - 12.1$$

$$c + d = 13$$

$$49 \div 7$$

$$c \div d = 7$$

$$31.4 - 12.5$$

$$c - d = 18.9$$



6 VF

9b. Match the pairs of numbers to the equations.

$$-47 - 13$$

$$c \div d = 17$$

$$12.5 \times 5$$

$$c - d = -60$$

$$5.5 \times 12$$

$$c \times d = 62.5$$

$$68 \div 4$$

$$c \times d = 66$$



6 VF

10a. True or false?

$$r + s = 11$$

$$r = -2, s = 13$$



6 VF

10b. True or false?

$$r \times s = 18 \frac{3}{4}$$

$$r = 6.25, s = 3$$



6 VF

11a. Which of the options fit the equation?

$$n \times m = 10$$

A. $n = 0.25$ $m = 40$

B. $n = 84$ $m = 73$

C. $n = \frac{3}{4}$ $m = 12$

D. $n = 2.5$ $m = 4$



11b. Which of the options fit the equation?

$$p + q = 40$$

A. $p = -32$ $q = 72$

B. $p = 12$ $q = 3$

C. $p = 27.5$ $q = 12.5$

D. $p = 48$ $q = 8$



8a. What pair of values have been used in the following equations if the values are always the same?

$a + b$	=	84.5
$a \times b$	=	42
$a \div b$	=	168
$a - b$	=	83.5



6 PS

8b. What pair of values have been used in the following equations if the values are always the same?

$a + b$	=	$12\frac{3}{4}$
$a \times b$	=	9
$a \div b$	=	16
$a - b$	=	$11\frac{1}{4}$



6 PS

9a. Evan is finding pairs for the equation below.

$$a \times b = -60$$

He says,



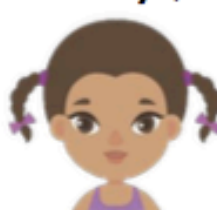
Both values must be a negative number because the answer is a negative number.

Is Evan correct? Explain why.

9b. Kirsty is finding pairs for the equation below.

$$a \div b = 19.5$$

She says,



Value b must be an odd number because the answer is a decimal.

Is Kirsty correct? Explain why.