

Arithmetic

1. $\frac{9}{10} \times \frac{4}{7}$

2. $9 - 4.18$

3. 0.3×70

4. $2 \frac{2}{3} \times 11$

Practice: Finding Pairs of Values

5. Recap: When finding pairs of values, why would an understanding of factors be useful? For example $ab = 12$. a and b are whole numbers.



6. Write this as an algebraic equation.

I think of a number (y) and add another number to it (z). My answer is 12.

7. Write this as an algebraic equation.

I think of a number (y) and multiply it by another number (z). My answer is 64.

8. $yz = 64$.

y is a one digit odd number.
 z is a two digit even number.
 $y =$ $z =$

9. $w + z = 20$

w is a one digit odd number.

z is a two digit odd number.

Give one possible value for w and z .

10. Why is it important to work systematically in algebra (and in mathematics).



11. $\frac{a}{b} = 2$

Give two possible values for a and b .

$a =$ $b =$

$a =$ $b =$

12. $c - d = 3$ c and d are both below 10.

Give two possible values for c and d .

$c =$ $d =$

$c =$ $d =$

13. Rehan is solving $fg = 4$.



He gives this possible solution: $f = 1$, $g = 3$.

Explain Rehan's mistake.

Challenge

14.

$ab = 80$

a and b are integers above 0. Showing all possible values for a and b .

Prove you have found all the answers.



You might want to talk to an adult



Spot the mistake

Answers

Q no.	Question	Answer												
1	$\frac{9}{10} \times \frac{4}{7}$	$\frac{36}{70}$ or $\frac{18}{35}$												
2	$9 - 4.18$	4.82												
3	0.3×70	21												
4	$2 \frac{2}{3} \times 11$	$\frac{88}{3}$ or $29 \frac{1}{3}$												
5	When finding pairs of values, why would an understanding of factors be useful?	If pupils are attempting to find a pair of values where two unknown whole numbers are multiplied to provide an answer, they can use their knowledge of factors to work out all the possible answers. Using the example, a and b could be 1 and 12, 2 and 6, 3 and 4 (or the numbers reverse).												
6	Write this as an algebraic equation.	$y + z = 12$ or $z + y = 12$												
7	Write this as an algebraic equation.	$yz = 64$ or $zy = 64$												
8	$yz = 64$. $y = ?$ $z = ?$	$y = 1, z = 64$												
9	Give one possible value for w and z.	$w = 1, 3, 5, 7, 9$ $z = 19, 17, 15, 13, 11$ The values given by pupils must add to 20.												
10	Why is it important to work systematically in algebra (and in mathematics)?	It is important to work systematically so that possible solutions are not missed. If one works at random in maths, it is very difficult to ensure that nothing has been missed.												
11	Give two possible values for a and b.	Accept answers where a divided by b = 2. Example answers: $a = 8$ and $b = 4$, $a = 4$ and $b = 2$, $a = 100$ and $b = 50$												
12	c and d are both below 10. Give two possible values for c and d.	As this question does not state that c and d are integers, pupils could have a range of answers. Accept any answers with a difference of 3. Example answers: $c = 9.5$ and $d = 6.5$, $c = 7$ and $d = 4$, $c = 4.75$ and $d = 1.75$												
13	Explain Rehan's mistake.	Rehan has misunderstood what it means when two letters are next to each other in algebra. He has understood it as $f + g = 4$ when it actually means $f \times g = 4$.												
14	<p>$ab = 80$ a and b are integers above 0.</p> <p>Complete the table showing all possible values for a and b.</p> <p>Prove you have found all the answers.</p>	<table border="1" style="display: inline-table; vertical-align: top;"> <thead> <tr> <th>a</th> <th>b</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>80</td> </tr> <tr> <td>2</td> <td>40</td> </tr> <tr> <td>4</td> <td>20</td> </tr> <tr> <td>5</td> <td>16</td> </tr> <tr> <td>8</td> <td>10</td> </tr> </tbody> </table> <p>Numbers in the rows can also be reversed (for example, $a = 80, b = 1$).</p> <p>Pupils should be encouraged to think about how to prove they have found all the answers beyond saying they have filled up the grid. They will have found all the answers when they have found all the factor pairs.</p>	a	b	1	80	2	40	4	20	5	16	8	10
a	b													
1	80													
2	40													
4	20													
5	16													
8	10													