



# Pairs of Unknowns

I can find pairs of numbers that solve an equation with two unknowns.



In each question, find all the possible pairs of numbers for  $a$  and  $b$ .

1. $a + b = 18$ The value of $a > 9$ and the value of $b > 4$ .				
$a =$	10			
$b =$				

2. $a - b = 12$ The value of $a > 20$ and the value of $b < 15$ .						
$a =$	21					
$b =$						

3. $ab = 48$ The values of $a$ and $b$ are whole numbers.										
$a =$	1									
$b =$										

4. $\frac{a}{b} = 5$ The value of $a$ is a whole number $< 50$ .										
$a =$	45									
$b =$										

5. $a + b = 37$ The value of $a < 20$ and the value of $b < 24$ .						
$a =$	19					
$b =$						

**Extra Challenge:** Can you spot any patterns in the sequence of numbers that you found for the value of each unknown? Can you explain what you have found?

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In each question, find all the possible pairs of numbers for  $a$  and  $b$ .

1.  $ab = 60$

The values of  $a$  and  $b$  are whole numbers.

$a =$	1												
$b =$													

2.  $\frac{a}{b} = 8$

The value of  $a$  is a whole number  $< 80$  but  $> 30$ .

$a =$	72												
$b =$													

3.  $a - b = 116$

The value of  $a$  is  $< 150$  and the value of  $b$  is  $> 25$ .

$a =$	149												
$b =$													

4.  $2a + b = 123$

The value of  $a$  is a whole number  $> 10$  and the value of  $b$  is  $> 90$ .

$a =$	11												
$b =$													

**Extra Challenge:** Can you spot any patterns in the sequence of numbers that you found for the value of each unknown? Can you explain what you have found?

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# Pairs of Unknowns

I can find pairs of numbers that solve an equation with two unknowns.



In each question, find all the possible pairs of numbers for  $a$  and  $b$ .

1.  $3a - b = 20$

The value of  $a$  is  $< 13$  and the value of  $b$  is a positive whole number.

$a =$	12					
$b =$						

2.  $a + 4b = 359$

The value of  $a$  is  $> 240$  and the value of  $b$  is  $> 25$ .

$a =$						
$b =$	26					

3.  $a - 2b = 217$

The value of  $a$  is  $< 332$  and the value of  $b$  is  $> 50$ .

$a =$						
$b =$	51					

4.  $3a + 2b = 151$

The value of  $a$  is  $< 10$  and the value of  $b$  is a whole number  $> 64$ .

$a =$						
$b =$						

**Extra Challenge:** Can you spot any patterns in the sequence of numbers that you found for the value of each unknown? Can you explain what you have found?

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# Pairs of Unknowns Answers

In each question, find all the possible pairs of numbers for  $a$  and  $b$ .

1.  $a + b = 18$

The value of  $a > 9$  and the value of  $b > 4$ .

$a =$	10	11	12	13
$b =$	8	7	6	5

2.  $a - b = 12$

The value of  $a > 20$  and the value of  $b < 15$ .

$a =$	21	22	23	24	25	26
$b =$	9	10	11	12	13	14

3.  $ab = 48$

The values of  $a$  and  $b$  are whole numbers.

$a =$	1	2	3	4	6	8	12	14	24	48
$b =$	48	24	14	12	8	6	4	3	2	1

4.  $\frac{a}{b} = 5$

The value of  $a$  is a whole number  $< 50$ .

$a =$	45	40	35	30	25	20	15	10	5
$b =$	9	8	7	6	5	4	3	2	1

5.  $a + b = 37$

The value of  $a < 20$  and the value of  $b < 24$ .

$a =$	19	18	17	16	15	14
$b =$	18	19	20	21	22	23



# Pairs of Unknowns Answers

In each question, find all the possible pairs of numbers for  $a$  and  $b$ .

1.  $ab = 60$

The values of  $a$  and  $b$  are whole numbers.

$a =$	1	2	3	4	5	6	10	12	15	20	30	60
$b =$	60	30	20	15	12	10	6	5	4	3	2	1

2.  $\frac{a}{b} = 8$

The value of  $a$  is a whole number  $< 80$  but  $> 30$ .

$a =$	72	64	56	48	40	32
$b =$	9	8	7	6	5	4

3.  $a - b = 116$

The value of  $a$  is  $< 150$  and the value of  $b$  is  $> 25$ .

$a =$	49	148	147	146	145	144	143	142
$b =$	33	32	31	30	29	28	27	26

4.  $2a + b = 123$

The value of  $a$  is a whole number  $> 10$  and the value of  $b$  is  $> 90$ .

$a =$	11	12	13	14	15	16
$b =$	101	99	97	95	93	91



# Pairs of Unknowns Answers

In each question, find all the possible pairs of numbers for  $a$  and  $b$ .

1. $3a - b = 20$ The value of $a$ is $< 13$ and the value of $b$ is a positive whole number.						
$a =$	12	11	10	9	8	7
$b =$	16	13	10	7	4	1

2. $a + 4b = 359$ The value of $a$ is $> 240$ and the value of $b$ is $> 25$ .				
$a =$	255	251	247	243
$b =$	26	27	28	29

3. $a - 2b = 217$ The value of $a$ is $< 332$ and the value of $b$ is $> 50$ .							
$a =$	319	321	323	325	327	329	331
$b =$	51	52	53	54	55	56	57

4. $3a + 2b = 151$ The value of $a$ is $< 10$ and the value of $b$ is a whole number $> 64$ .				
$a =$	1	3	5	7
$b =$	74	71	68	65