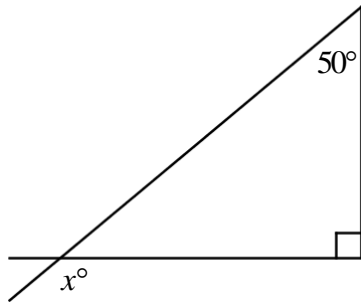


1. If  $x - y = -6$ , then  $y$  is how much greater than  $x$ ?

●	●	●	●
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9



2. In the figure above, what is the value of  $x$ ?

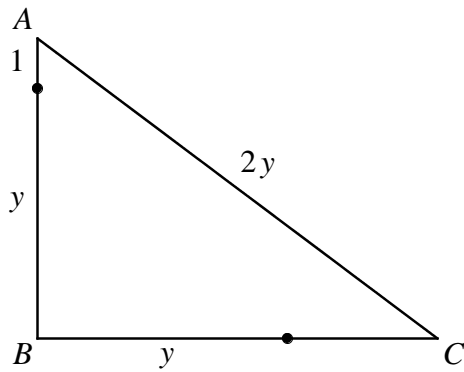
●	●	●	●
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

3. If  $\{x\}$  is defined as the number of distinct prime factors of  $x$ , what is the value of  $\{15\} - \{38\}$ ?

●	●	●	●
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

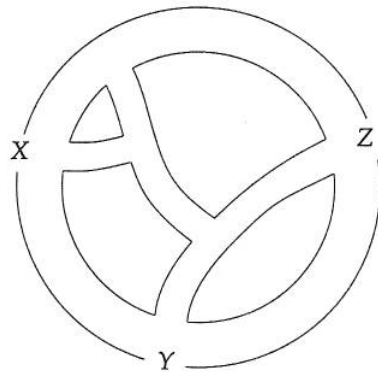
4. If  $x$  is an integer and  $\frac{x}{4}$  is less than .8 and greater than .25, what is one possible value of  $x$ ?

●	●	●	●
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9



5. If  $y = 5$ , what is the length of  $BC$ ?

	/	/	
	.	.	.
	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9



6. On the map above,  $X$  represents a theater,  $Y$  represents Chris's house, and  $Z$  represents Peter's house. Chris walks from his house to Peter's house without passing the theater and then walks with Peter to the theater without walking by his own house again. How many different routes can Chris take?

	/	/	
	.	.	.
	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

7. In a certain game, 8 cards are randomly placed face-down on a table. The cards are numbered from 1 to 4 with exactly 2 cards having each number. If a player turns over two of the cards, what is the probability that the cards will have the same value?

	/	/	
	.	.	.
	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

8. At a certain beach, the cost of renting a beach umbrella is \$4.25 per day or \$28.00 per week. If Kelly and Brandon rent a beach umbrella for 2 weeks instead of renting one each day for 14 days, how much money, in dollars, will they save?

.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

9. If  $x^3 = 27$ , then what does  $5^x$  equal?

.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

10. The "zip" of a number is defined as any positive integer raised to a power of the same number. For example, the "zip" of 2 is  $2^2$ . What is the greatest possible value of the "zip" of 4 minus the "zip" of  $x$ ?

.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

11. In a certain cereal, the ratio of wheat flakes to raisans to almonds is 14:2:1. If  $\frac{1}{4}$  cup of cereal contains 5 raisans, how many more wheat flakes than almonds are there in 2 cups of cereal?

.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

12. A cube with sides of 6 is split into 8 smaller cubes of equal size. What is the total length of the edges of the 8 smaller cubes?

.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9