Example 3

Evaluating Absolute Value Expressions

Evaluate the following.

a) $|4| - |-6|$ **b)** $5 - 3|2 - 7|$ **c)** $|-2(5 - 7)^2 + 6|$

Solution

a) $|4| - |-6| = 4 - 6$
$$= -2$$

b) $5 - 3|2 - 7| = 5 - 3|-5|$
$$= 5 - 3(5)$$
$$= 5 - 15$$
$$= -10$$

c) $|-2(5 - 7)^2 + 6| = |-2(-2)^2 + 6|$
$$= |-2(4) + 6|$$
$$= |-8 + 6|$$
$$= |-2|$$
$$= 2$$

Apply the order of operations to evaluate the expression inside the absolute value symbol.

Your Turn

Evaluate the following.

a) $|-4| - |-3|$ **b)** $|-12 + 8|$ **c)** $|12(-3) + 5^2|$

Chapter 7
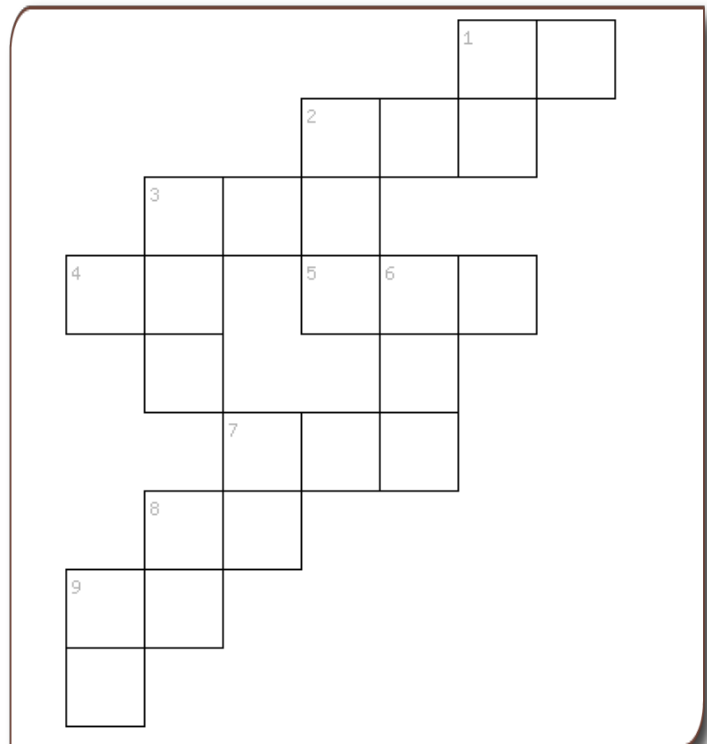
Evaluate an Absolute Value Expression

Complete the crossword puzzle by evaluating the given expressions.

Across

1. $|3(8 + 3) - 6| + |-2(8 - 4)|$
2. $|-5(-12 - 8)| + |-42|$
3. $|-5(15 + 8)| + 13$
4. $|5(-6 - 4) - 10| + |-2(3 + 5)|$
5. $|8(12 + 2) + 20| + |6(-8 - 5)|$
7. $(|-25|)(|-6 - 4|)$
8. $|10(16 - 25)| - |-8 + 12|$
9. $|12 - 20| + |16 + 8| + |-22 - 6|$

Down

1. $(|-4(5 - 8) - 16|)(|5 - 13|)$
2. $|180 - 20| - |12 - 20| + |-25 - 5|$
3. $|-10(5 + 8)| + |-5(3 + 4)|$
6. $|-120| - |15| + |35|$
7. $|-4(5 + 3) - 2| - 8$
8. $|60| + |-20|$
9. $(|-6 - 8|)(|5 - 2|) + |-22|$
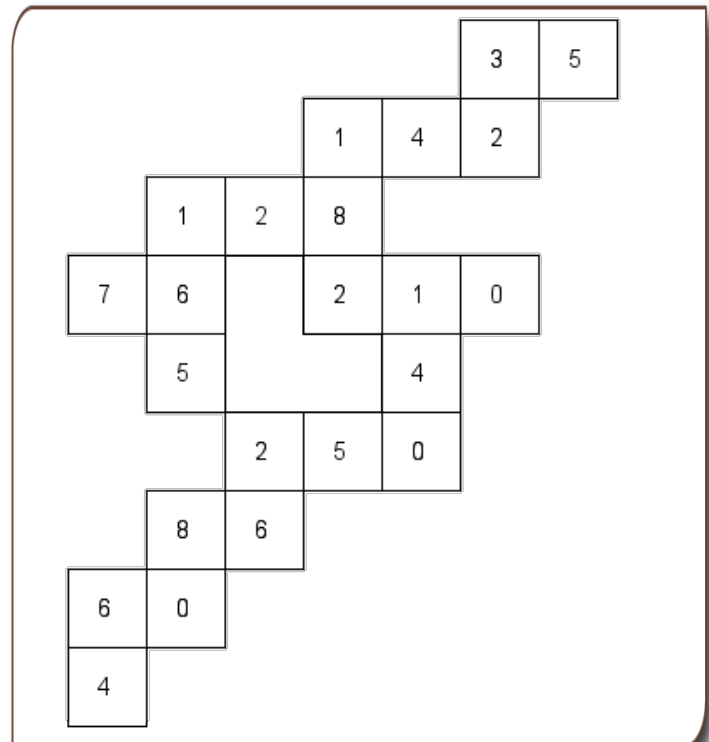

Click here for the solution

Solution

Across

1. $|3(8 + 3) - 6| + |-2(8 - 4)|$
2. $|-5(-12 - 8)| + |-42|$
3. $|-5(15 + 8)| + 13$
4. $|5(-6 - 4) - 10| + |-2(3 + 5)|$
5. $|8(12 + 2) + 20| + |6(-8 - 5)|$
7. $(|-25|)(|-6 - 4|)$
8. $|10(16 - 25)| - |-8 + 12|$
9. $|12 - 20| + |16 + 8| + |-22 - 6|$

Down

1. $(|-4(5 - 8) - 16|)(|5 - 13|)$
2. $|180 - 20| - |12 - 20| + |-25 - 5|$
3. $|-10(5 + 8)| + |-5(3 + 4)|$
6. $|-120| - |15| + |35|$
7. $|-4(5 + 3) - 2| - 8$
8. $|60| + |-20|$
9. $(|-6 - 8|)(|5 - 2|) + |-22|$

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

Go back to the question.