

### What's Up With Zero? Practice

1. If  $x$  can be anything but zero, which of the following is undefined?  
A)  $0 + x$                       B)  $(0)(x)$                       C)  $\frac{x}{0}$                       D)  $x - 0$
  
2. The value of  $2^3 - (1 + (12)(0) - 12) \div (3 + 2 \times 4)$  is \_\_\_\_.
  
3. Given the expression,  $\frac{12}{x+2}$ , a value for  $x$  that would make the expression undefined is  
A) 2                      B) -2                      C) 12                      D) 0
  
4. If  $(m + 1)(m - 4) = 0$ , then the statement below that is true is  
A)  $m = 1$                       B)  $m = 4$                       C)  $m = 0$                       D)  $m = -4$
  
5. The value of  $(9 - \frac{0}{3}) \div (-3^2 + (3)(0)) \times (-10 - 12 \div 4)$  is \_\_\_\_.
  
6. Which two numbers will make a true statement, given  $5x(x - 2) = \frac{0}{4}$ ?  
A) 0 and 2                      B) 0 and 4                      C) 2 and 4                      D) -2 and 0

## What's Up With Zero? Practice **Solutions**

1. If  $x$  can be anything but zero, which of the following is undefined?

A)  $0 + x$

B)  $(0)(x)$

**C)  $\frac{x}{0}$**

D)  $x - 0$

**Solution**

A result of undefined is the outcome of dividing by zero.

**The correct answer is C.**

2. The value of  $2^3 - (1 + (12)(0) - 12) \div (3 + 2 \times 4)$  is 9.

**Solution**

For order of operations questions, recall BEDMAS.

**Brackets**

**Exponents**

**Divide/Multiply** (as it appears left to right)

**Add/Subtract** (as it appears left to right)

$$2^3 - (1 + (12)(0) - 12) \div (3 + 2 \times 4)$$

$$8 - (1 + 0 - 12) \div (3 + 8)$$

$$8 - (-11) \div (11)$$

$$8 - (-1)$$

$$= 9$$

**The value of  $2^3 - (1 + (12)(0) - 12) \div (3 + 2 \times 4)$  is 9.**

3. Given the expression,  $\frac{12}{x+2}$ , a value for x that would make the expression undefined is

A) 2

B) -2

C) 12

D) 0

**Solution**

The denominator cannot be equal to zero. Currently, the expression for the denominator is  $x + 2$ . The question is: what value of x will make the denominator equal to zero?

If  $x = -2$ , the denominator will be equal to zero. Thus, the expression will be undefined if  $x = -2$ .

**The correct answer is B.**

4. If  $(m + 1)(m - 4) = 0$ , then the statement below that is true is

A)  $m = 1$

B)  $m = 4$

C)  $m = 0$

D)  $m = -4$

**Solution**

When 2 expressions [  $(m + 1)$  and  $(m - 4)$  ] are multiplied to equal zero, at least one of the expressions must be equal to zero.

Set each expression equal to zero and determine the value of the variable that would make the expression equal to zero.

Expression 1

$$m + 1 = 0$$

$$m = -1$$

Expression 2

$$m - 4 = 0$$

$$m = 4$$

Therefore, the statement will be true if  $m = -1$ , or if  $m = 4$ .

**The correct answer is B.**

5. The value of  $(9 - \frac{0}{3}) \div (-3^2 + (3)(0)) \times (-10 - 12 \div 4)$  is 13.

Solution

For order of operations questions, recall BEDMAS.

**B**rackets

**E**xponents

**D**ivide/**M**ultiply (as it appears left to right)

**A**dd/**S**ubtract (as it appears left to right)

$$(9 - \frac{0}{3}) \div (-3^2 + (3)(0)) \times (-10 - 12 \div 4)$$

$$(9) \div (-9 + 0) \times (-10 - 3)$$

$$9 \div -9 \times (-13)$$

$$(-1) \times (-13)$$

$$= 13$$

**The value of  $(9 - \frac{0}{3}) \div (-3^2 + (3)(0)) \times (-10 - 12 \div 4)$  is 13.**

6. Which two numbers will make a true statement, given  $5x(x - 2) = \frac{0}{4}$  ?

A) 0 and 2

B) 0 and 4

C) 2 and 4

D) -2 and 0

Solution

Since  $\frac{0}{4} = 0$ , the equation can be rewritten as  $5x(x - 2) = 0$ .

When 2 expressions [  $(5x)$  and  $(x - 2)$  ] are multiplied to equal zero, at least one of the expressions must be equal to zero.

Set each expression equal to zero and determine the value of the variable that would make the expression equal to zero.

Expression 1

$$5x = 0$$

$$x = 0$$

Expression 2

$$x - 2 = 0$$

$$x = 2$$

Therefore, the statement will be true if  $x = 0$ , or if  $x = 2$ .

**The correct answer is A.**