

Math Bowl – Integer equations +, -, ×, ÷

1. If $f(x) = 4 * (x-1)$ and $g(x) = 2x - x$, then what is $g(f(3))$?
(hint: first find $f(3)$, then use the $g(x)$ equation)

Evaluating Variable Expressions

Evaluate each using the values given.

1) $n^2 - m$; use $m = 7$, and $n = 8$

2) $8(x - y)$; use $x = 5$, and $y = 2$

3) $yx \div 2$; use $x = 7$, and $y = 2$

4) $m - n \div 4$; use $m = 5$, and $n = 8$

5) $x - y + 6$; use $x = 6$, and $y = 1$

6) $z + x^3$; use $x = 1$, and $z = 19$

7) $y + yx$; use $x = 15$, and $y = 8$

8) $q \div 6 + p$; use $p = 10$, and $q = 12$

9) $x + 8 - y$; use $x = 20$, and $y = 17$

10) $15 - (m + p)$; use $m = 3$, and $p = 10$

Solving One-step Equations

If you are asked to solve an equation for a variable, you need to find a value for the variable that makes the equation true.

One-step equations require you to reverse the operation of the problem to find the value of the variable.

Examples:

Addition Property of Equality: You can add or subtract the same number from both sides of an equation and the equation will stay balanced.

A. $x + 3 = 9$
 $x + 3 - 3 = 9 - 3$
 (subtract 3 from both sides)
 $x = 6$

B. $x - 5 = 12$
 $x - 5 + 5 = 12 + 5$
 (add 5 to both sides)
 $x = 17$

Multiplication Property of Equality: You can multiply or divide both sides of an equation by the same number and the equation will stay balanced.

C. $5x = 25$
 $\frac{5x}{5} = \frac{25}{5}$
 (divide both sides by 5)
 $x = 5$

D. $\frac{x}{4} = 8$
 $\frac{x}{4} \times 4 = 8 \times 4$
 (multiply both sides by 4)
 $x = 32$

Solve the following problems using the Properties of Equality. Show each step. Write the answer on the line.

1. $x + 9 = 12$ _____

9. $6x = 18$ _____

2. $x + 15 = 28$ _____

10. $8x = 56$ _____

3. $x + 5 = -8$ _____

11. $15x = -45$ _____

4. $x + 25 = -15$ _____

12. $3x = -36$ _____

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One-Step Equations With Integers

Solve each equation.

1) $v - 10 = -9$

2) $v - 10 = -3$

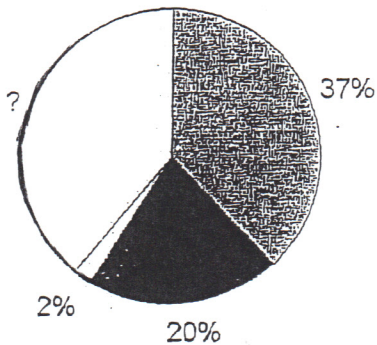
3) $x - 3 = 4$

4) $\frac{x}{5} = 2$

- 1) If $2x + 4 = 10$, what does $5x + 12 - 2x$ equal?

Answer: _____

- 2) The students of Buzz Lightyear Academy are going on a field trip to the museum. 37% of the students are going to the moon exhibit, 20% are going to the star command exhibit, 2% are going to see the space rocks, and the rest are going to the alien petting zoo. If 200 students went on the field trip, *how many of the students* went to the alien petting zoo?



Answer: _____

- 3) Peter Piper had a rectangular pickle patch that had an area of 176 ft.^2 (remember that $\text{area} = \text{length} \times \text{width}$). If one side of the garden is 22ft. long, how much fence will Peter Piper need to put around his patch?

Answer: _____

- 4) At WhatstheDillio Pet Store, 5 goldfish cost \$8.00, 2 hamsters cost \$12.50, and parrots cost \$53.00 each. If you bought 3 goldfish, 1 hamster, and 2 parrots, how much would it cost?

Answer: _____

5. Add or subtract. Your final answer must be written as a mixed number.

$$\frac{5}{6} + \frac{2}{3} - (.6) + \frac{7}{10}$$

6. Evaluate. (Remember $\Rightarrow 2^3$ means $2 \times 2 \times 2$)

$$\frac{4^3}{8} + \frac{8}{2^3}$$