

**Equations Review Algebra****Short Answer**

1. A class writes the equation  $n + n + 1 + n + 2 = 87$  to solve the following problem.

The sum of 3 consecutive odd integers is 87. Find the three integers.

What error did they make?

2. Elise and Miguel both collect baseball cards. Miguel has 2 more than 2 times as many cards as Elise. Together they have 971 cards.
- Write an equation to represent this situation.
  - How many cards does each person have?
3. Caitlin had \$402 in her bank account. She withdrew \$15 each week to pay for a swimming lesson. She now has \$237.
- Write an equation that can be used to find the number of swimming lessons that she paid for.
  - How many swimming lessons did she pay for?
  - At the time she had \$237, the cost of a lesson rose to \$19. How many lessons can she pay for with her remaining \$237?

**Solve the equation.**

4.  $\frac{1}{4}r - \frac{1}{16} + \frac{1}{2}r = \frac{1}{2} + r$
5.  $-5y - 9 = -(y - 1)$
6.  $2 = \frac{10 + z}{-3}$
7.  $\frac{5p}{7} - 18 = -43$
8.  $3p - 1 = 5(p - 1) - 2(7 - 2p)$
9. The formula for converting degrees Fahrenheit ( $F$ ) to degrees Celsius ( $C$ ) is  $C = \frac{5}{9}(F - 32)$ . Solve for  $F$ .
10. Solve the area formula for a trapezoid,  $A = \frac{1}{2}h(b_1 + b_2)$ , for  $b_1$ .

**Solve the equation or formula for the indicated variable.**

11.  $S = 5r^2t$ , for  $t$
12.  $T = \frac{2U}{E}$ , for  $U$

**Solve for  $x$ .**

13.  $a(bx + 2) = cx - 12$
14. A customer went to a garden shop and bought some potting soil for \$17.50 and 4 shrubs. The total bill was \$53.50. Write and solve an equation to find the price of each shrub.
15. A camera manufacturer spends \$2,100 each day for overhead expenses plus \$9 per camera for labor and materials. The cameras sell for \$14 each.
- a. How many cameras must the company sell in one day to equal its daily costs?
- b. If the manufacturer can increase production by 50 cameras per day, what would their daily profit be?

**Solve the equation.**

16.  $78 = -2(m + 3) + m$
17.  $\frac{4}{9}n + 6 = \frac{4}{3}$
18.  $-\frac{3}{10} + a = \frac{2}{5}$
19.  $\frac{5}{4}(a - 8) = \frac{2}{3}$
20.  $x - 9 = -6x + 5$
21. If a number  $n$  is subtracted from 25, the result is three less than  $n$ . What is the value of  $n$ ?
22. Write the given sentence as an equation.  
Tim's age in 7 years will be three times what it was 19 years ago.