

Practice Test

Solve for the unknown.

1. $5m - 15 = 40$

$+15 \quad +15$

$\frac{5m}{5} = \frac{55}{5}$

$m = 11$

2. $3\left(-\frac{2m}{3} - 5\right) = (25) \cdot 3$

$-3m - 15 = 75$
 $+15 \quad +15$

$-3m = 90$

$\frac{-3m}{-3} = \frac{90}{-3}$

$m = -30$

3. $-2(m - 5) = 25$

$-2m + 10 = 25$
 $-10 \quad -10$

$-2m = 15$
 $-2 \quad -2$

$m = -7.5$

4. $m + 5 = 2m + 6$

$-m \quad -m$

$5 = m + 6$
 $-6 \quad -6$

$-1 = m$

5. Solve $3\left(\frac{2}{3}(m+5) + 1\right) = (6) \cdot 3$

$2(m+5) + 3 = 18$
 $-3 \quad -3$

$2(m+5) = 15$

$2m + 10 = 15$
 $-10 \quad -10$

$\frac{2m}{2} = \frac{5}{2}$

$m = \frac{5}{2}$

6. Spot the error and solve correctly

$-\frac{m}{3} - 5 = 25$

$-m - 5 = 75$ ← error

$-m = 80$

$m = -80$

$3\left(-\frac{m}{3} - 5\right) = (25) \cdot 3$

$-m - 15 = 75$

$+15 \quad +15$

$-m = 90$

$m = -90$

7. Translate the following from words to mathematical equations with one variable. You do not need to solve the equations. (1 mark each)

a) Seventeen more than three times a number is eighty.

Let n be the number

$$3n + 17 = 80$$

b) Three consecutive odd numbers have a sum of 309.

Let n be the 1st number
 $n+2$ " " 2nd "
 $n+4$ " " 3rd "

$$n + n + 2 + n + 4 = 309$$

12. Solve the following word problems. Each answer must have a let statement defining the variable used, an equation, and a solution for full marks. (4 marks each)

a) Kevin has some dimes and quarters with a total value of \$2.50. If he has three more quarters than dimes, how many of each coin does he have?

Let d be the number of dimes.

$d+3$ be the number of quarters.

$$25(d+3) + 10d = 250$$

$$25d + 75 + 10d = 250$$

$$\frac{35d}{35} = \frac{175}{35}$$

$$\boxed{d=5} \quad \text{quarters} = d+3 = 8$$

There are 5 dimes and 8 quarters.

b) At a particular store, DVDs cost \$14 for the first one and \$12 for each addition one. If Jessica spends \$86, how many DVDs does she buy?

Let n be the number more than 1 of DVD's that Jessica bought.

$$14 + 12n = 86$$

$$-14 \quad -14$$

$$\frac{12n}{12} = \frac{72}{12}$$

$$\boxed{n=6}$$

Jessica bought 7 DVD'S

- c) Find three consecutive integers such that the sum of the first and second is 9 more than half of the third integer.

Let n be the first number
 $n+1$ " " 2nd "
 $n+2$ " " 3rd "

$$n + n+1 = \frac{n+2}{2} + 9$$

$$2(2n+1) = 2\left(\frac{n+2}{2} + 9\right)$$

$$4n + 2 = n+2 + 18$$

$$\begin{array}{r} 4n + 2 = n + 20 \\ -n \qquad -n \end{array}$$

$$\begin{array}{r} 3n + 2 = 20 \\ -2 \qquad -2 \end{array}$$

$$\frac{3n}{3} = \frac{18}{3}$$

$$n = 6$$

$$n+1 = 7$$

$$n+2 = 8$$

The numbers are 6, 7 and 8

