

1. Solve each of the following:

a) $k - 7 = 8$

b) $2 + x = 18$

c) $p - 15 = -4$

d) $3t = 18$

e) $\frac{a}{4} = 8$

f) $\frac{1}{3}y = 9$

2. Solve each of the following:

a) $3x + 2 = 17$

b) $-3x - 7 = 9$

c) $8 - 2x = -2$

d) $5x - 2 = 3x + 8$

e) $3x + 5x - 2 = 32 - 2$

f) $5(2x - 1) = 2x + 25$

g) $3(2x + 7) = 5(x + 1) - 17$

h) $\frac{1}{2}a - 5a = \frac{1}{3}$

i) $\frac{3x - 2}{5} = \frac{5x + 1}{3}$

j) $\frac{1}{3}x - 2 = \frac{2}{5}x + \frac{1}{3}$

k) $-3x + 2 = -7$

l) $5(x - 2) = 3(2x + 4)$

m) $2(3x + 4) + 3(2x - 4) = 32$

n) $x + 3 = 12$

o) $3x = 15$

p) $-6y = 42$

q) $x - 5 = -8$

r) $2 - y = -25$

s) $9 = -x - 3$

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

u) $\frac{2}{x} = -7$

v) $\frac{x}{2} + \frac{2}{3} = 4$

w) $\frac{11}{2} - \frac{4x}{5} = \frac{5}{2}$

x) $\frac{x}{5} = 2 + \frac{x}{3}$

y) $\frac{3y}{7} = \frac{-8}{21}$

z) $\frac{12}{2x} = 2 + \frac{3}{3x}$

4. Use proper Solving Word Problems steps for each of the following.

a) Find 4 consecutive integers such that the sum of the smallest and largest numbers is 59.

b) A garden hose measuring 25m in total length is made up of two separate hoses. If one hose is 2m shorter than twice the length of the other, find the length of the shorter hose.

c) Sue is twice as old as Karen. In seven years, the sum of their ages will be 38. How old is each girl now?

d) The perimeter of a triangle is 701m. If the largest side is 4 times the smallest and the second largest side is 200m larger than the smallest side, determine the lengths of all three sides.

e) Determine the ages of 4 brothers if the two younger brothers are twins and one brother is 15 years older while the oldest brother is 3 times the age of the twin, if the sum of their ages is 99 years.

f) Determine the ages of two sisters 21 years from now, if the older sister is twice as old as the youngest sister. In 21 years the sum of their ages will be 78 years.

g) Determine the ages of triplets if the sum of their ages in 10 years will be 45.

5. A can holds 355 ml of cola. A case of 24 cans costs \$4.99.

a) Find the cost of 38 cans to the nearest cent.

b) Based on the unit price of 100ml, calculate the cost of a 2L jug of cola, to the nearest cent.

c) Find the cost of 1600 cans to the nearest cent.

d) Based on the unit price of 100ml, calculate the cost of a dozen 2L jugs of cola, to the nearest cent

6. Mr. Jimmie works at a gas station after school. In 4.5 hours of work Mr. J. earns \$32.67.

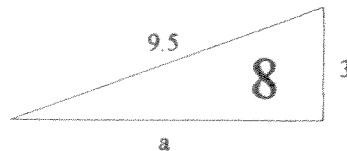
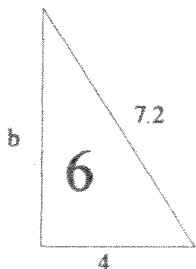
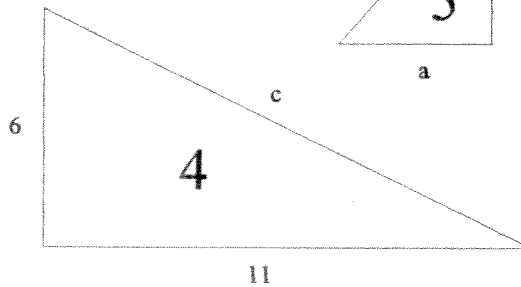
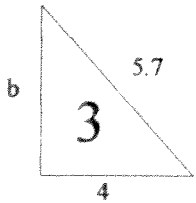
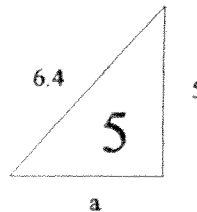
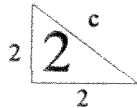
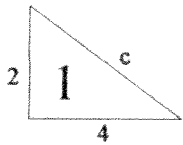
a) At this rate, how much would he earn in 8 hours? 16 hours? 32 hours?

b) How many hours would he have to work in order to make \$87.12? \$290.40? \$35?

c) Write an equation showing the relationship between the number of hours Mr. J. works (h) and his total earnings (E).

d) If you knew the amount Mr. J. earned, write an equation determining the hours worked.

7. Calculate the length of the unknown side for each of the following right angle triangles (in order of 1 to 8). Round your final answers to (one) decimal place.



USE THE FORMULA $c^2 = a^2 + b^2$

1. Simplify each of the following:

(a) $7x - 3x + x - 2x =$

(b) $4y + 3y^2 - y^2 - 9y =$

(c) $2xy + 7yx + 6xy =$

(d) $9 - 3a + 2 - 4a =$

(e) $5 + 2x - 13x + 14 - 17x - 8 =$

(f) $(21y + 5) + (9 - 21y) =$

2. Expand and simplify if possible.

(a) $\underline{5(3y - 4)}$

(b) $\underline{-3(4x - x^2 + 7)}$

(c) $\underline{2(x - 3) + 7(2x - 1)}$

(d) $\underline{8(4y - 3) - (9y - 5)}$

(e) $\underline{4(3a + c - 6) - 2(8a - 5c + 11)}$

(f) $\underline{7(3r + 8) - (r - 3) - (20r + 6)}$

3. Solve for the indicated variable. (answers only are required)

(a) $x + 3 = 12 ; x = \underline{\hspace{2cm}}$

(b) $\frac{x}{5} = 2 ; x = \underline{\hspace{2cm}}$

(c) $3x = 15 ; x = \underline{\hspace{2cm}}$

(d) $9x = 0 ; x = \underline{\hspace{2cm}}$

(e) $4 - y = 7 ; y = \underline{\hspace{2cm}}$

(f) $-6y = 42 ; y = \underline{\hspace{2cm}}$

(g) $9 = -x - 3 ; x = \underline{\hspace{2cm}}$

(h) $x - 5 = -8 ; x = \underline{\hspace{2cm}}$

(i) $2 - y = -25 ; y = \underline{\hspace{2cm}}$

(j) $\frac{2}{x} = -7 ; x = \underline{\hspace{2cm}}$

4. Solve each of the following equations (show all necessary steps).

(a) $3x - 4 = 11$

(b) $5x + 7 = 12$

(c) $-2x - 5 = 7$

(d) $12x - 32 = 112 - 8x + 6$

(e) $8x + 6 - x = 4 + 3x + 2$

(f) $4(2x + 6) = 48$

(g) $3y + 2(50 - y) = 110$

(h) $2(x - 5) - 3 = 4(x + 1)$

(i) $\frac{x}{2} + \frac{2}{3} = 4$

(j) $\frac{11}{2} - \frac{4x}{5} = \frac{5}{2}$

(k) $\frac{x}{5} = 2 + \frac{x}{3}$

(l) $\frac{3y}{7} = \frac{-8}{21}$

5. The formula for converting Celsius temperatures to Fahrenheit is

$$F = 1.8C + 32$$

(a) Find the temperature in $^{\circ}\text{F}$ when it is 25°C .

(b) When the temperature is 15°F , what is it in $^{\circ}\text{C}$?

6. Present a solution using an equation for each of the following.

(a) Find 4 consecutive integers such that the sum of the smallest and largest is 59.

(b) A 25m garden hose is made up of two separate hoses. If one hose is 2m shorter than twice the length of the other, find the length of the shorter hose.

(c) Sue is twice as old as Karen. In seven years, the sum of their ages will be 38. How old is each girl now?