Lesson: Rearranging Formulas

Example 1
$A = L \times w,$ solve for L

Example 2
$P = 2L + 2w,$ solve for w

Example 3
$C = 2\pi r,$ solve for r

Example 4
$y = mx + b,$ solve for m

Example 5
$A = s^2,$ solve for s

Practice: Rearranging Formulas
Substitute, then solve for the unknown variable:
a. $y = mx + b$; $y = 10$, $m = 3$, $b = 4$

b. $I = Prt$; $I = \$30$, $P = \$1000$, $t = 0.5$years

c. $P = 2(\ell + w)$; $P = 100m$, $\ell = 30m$

d. $S = \dfrac{d}{t}$; S=120km/h, t=4h

Rearrange each formula for the indicated variable.

e. $y = mx + b$, solve for x   f. $I = Prt$, solve for r

g. $S = \dfrac{d}{t}$,   solve for d

h. $P = 2(\ell + w)$, solve for ℓ i. $x^2 + y^2 = r^2$,   solve for x   j. $A = P(1 + rt)$, solve for r

k. It is not safe for an adult to surpass her or his maximum heart rate. This maximum heart rate, M, in beats per minute (bpm), is modeled by the equation M=230 − 1.2A, where A is the age of the adult in years.

Rearrange to solve for A.   At what age should a person's maximum exercising heart rate be 194 bpm? 134 bpm?

l. The cost, C, in dollars, of producing a school yearbook is given by the formula C=S+4n, where S is the setup cost, and n is the number of yearbooks printed.

Solve the formula for n.   If the set-up cost is \$925, how many yearbooks can be printed? If C=\$1500?

ANSWERS: a) x=2, b) r=0.06 (6%), w=20m, d) d=480km, e) x= $\dfrac{y-b}{m}$, f) r= $\dfrac{I}{Pt}$, g) d=st, h) l = $\dfrac{p-2w}{2}$, i) x= r − y,

j) r= $\dfrac{A-P}{Pt}$, k) A= $\dfrac{M-230}{-1.2}$:30yrs:80yrs, l) n= $\dfrac{C-S}{4}$:143 yearbooks