

Chapter 3:

Solve the literal equation.

26. $I = Prt$ (Solve for P .)

To isolate P , we simply divide each side by $r \cdot t$

$$\frac{I}{r \cdot t} = \frac{P \cdot r \cdot t}{r \cdot t}$$

$$\frac{I}{rt} = P$$

write the new formula with P on the left side

$$P = \frac{I}{rt}$$

28. $Z = \frac{x - m}{d}$ (Solve for m .)

we must first clear the fraction by multiplying each side by $\frac{d}{1}$.

$$\frac{d}{1} \cdot Z = \frac{x - m}{d} \cdot \frac{d}{1}$$

$$dZ = x - m$$

+ m + m

Because the variable term, m , is negative, add it to each side.

$$dZ + m = x$$

$$\underline{-dZ} \quad \quad \quad \underline{= -dZ}$$

Now, to isolate m , we must subtract dZ from each side.

$$m = x - dZ$$

This can also be written as

$$m = x - Zd$$

27. $A = P + Pr$ (Solve for r .)

To isolate r , we must isolate the "variable term" (the one that contains r): Pr . First, subtract P .

$$A = P + Pr$$

$$\underline{-P} \quad \quad \underline{= -P}$$

$$A - P = Pr$$

now divide by P

$$\frac{A - P}{P} = \frac{Pr}{P}$$

$$\frac{A - P}{P} = r$$

$$r = \frac{A - P}{P}$$

29. $ax + by = c$ (Solve for y .)

the variable term is by . Isolate it by adding $-ax$ to each side.

$$ax + by = c$$

$$\underline{-ax} \quad \quad \quad \underline{= -ax}$$

$$by = c - ax$$

now divide each side by b .

$$\frac{by}{b} = \frac{c - ax}{b}$$

$$y = \frac{c - ax}{b}$$

* The answer to #27 can also be simplified this way:

$$r = \frac{A - P}{P}$$

Separate the right side into two fractions.

$$r = \frac{A}{P} - \frac{P}{P}$$

$$\frac{P}{P} = 1$$

$$r = \frac{A}{P} - 1$$

For each application problem,

You will be graded on each of these items.

1. Set up the legend for all unknown values ✓
2. identify the formula ✓
3. set up and solve the equation (show all work) ✓
4. write a sentence answering the question ✓

A chart will be provided for your convenience. You will not be graded on the chart.

30. Juana has only two grandchildren, ^xVeronica (the eldest) and Jorge. Her will states that Veronica is to receive \$15,000 more than Jorge receives (to help her pay for college). If Juana's will leaves \$103,000 to her two grandchildren, how much will each of them receive?

Legend: Let x = amount Jorge receives
 $x + 15,000$ = amount Veronica receives

Formula: Jorge + Veronica = Total

Jorge	Veronica	Total
x	$x + 15,000$	103,000
$J + V = T$		

Equation: $x + (x + 15,000) = 103,000$

$$x + x + 15,000 = 103,000$$

$$2x + 15,000 = 103,000$$

$$\underline{- 15,000 = - 15,000}$$

$$2x = 88,000$$

$$\frac{2x}{2} = \frac{88,000}{2}$$

$$x = 44,000 \text{ (Jorge)}$$

Jorge: \$44,000

Veronica:

$$44,000 + 15,000$$

$$= \$59,000$$

Sentence: Jorge will receive \$44,000 and Veronica will receive \$59,000.