1.7 Problem Solving Plan

Strategies

- Guess and check
- Make a table
- Look for a pattern
- Draw a diagram
- Work backwards
- Work a simpler problem
- Write an equation
Getting a Speeding Ticket

Greg lives in a state in which speeders are fined $15 for each mile per hour over the speed limit. Greg was given a ticket for $180 for speeding on a road where the speed limit is 45 miles per hour. How fast was Greg driving?
Using an equation

- Verbal model
- Label the unknown
- Write an equation
- Solve
- Answer the question

$15 \cdot \text{MPH over speed limit} = \text{Amount of speeding ticket}$

$\text{MPH} = x$

$\text{Speeding ticket} = $180$

$15x = 180$

$x = 12$

Greg was driving 57 miles per hour.
1. You buy a computer for $1500. If you put $575 as a down payment, and wish to pay your bill off in 20 payments, how much will each monthly payment cost?
   • Do the proper steps!

1. The down payment + the 20 monthly payments equals $1500 (total cost of the computer).
2. $575 + 20n = $1500
3. $575 + 20n = $1500
4. n = $46.25
5. The monthly payment is $46.25.
2. If an airplane flies from NYC to St. Louis, @500mph, and flies over Dayton, Ohio; at 400 miles from St.L and is told it needs to wait 3 hours before landing, should the pilot reduce his speed?
   - Distance: \( d = rt \)

1. Distance = rate times time.
2. \( D = 400 \) miles
   \( r = \) rate
   \( t = 3 \) hours
3. \( 400 = 3r \)
4. \( r = 133 \text{ mph} \)
5. The pilot should not reduce his speed. At high altitudes a pilot must maintain a minimum speed of 350 mph to avoid stalling.