STUMPERS 12

1. Solve for x:

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

(c) $a(bx+c)=d$.

2. Day student Avery just bought 10 gallons of gasoline, the amount of fuel used for the last 355 miles of driving. Being a curious sort, Avery wondered how much fuel had been used in city driving (which takes one gallon for every 25 miles) and how much had been used in freeway driving (which takes one gallon for each 40 miles). Avery started by guessing 6 gallons for the city driving, then completed the first row of the guess-and-check table below. Notice the failed check. Make your own guess and use it to fill in the next row of the table.

city g	*freeway g*	*city mi*	*freeway mi*	*total mi*	*target*	*check*
6	$10-6=4$	$6(25)=150$	$4(40)=160$	$150+160=310$	355	no

Now write c in the city-gallon column, fill in the remaining entries in terms of c, and set your expression for the total mileage equal to the target mileage. Solve the resulting equation.

3. Remy walked to a friend's house, m miles away, at an average rate of 4 mph. The m-mile walk home was at only 3 mph, however. Express as a fraction

(a) the time Remy spent walking home;

(b) the total time Remy spent walking.

4. The sum of four consecutive integers is 2174. What are the integers?

5. (Continuation) The smallest of four consecutive integers is n. What expression represents the next larger integer? Write an expression for the sum of four consecutive integers, the smallest of which is n. Write an equation that states that the sum of four consecutive integers is s. Solve the equation for n in terms of s. Check that your answer to the previous question satisfies this equation by considering the case $s = 2174$.

6. Solve for x: (a) $2(x-1)=3(x+2)$ (b) $-4(2x-2)=3(x+1)$

7. There are three feet in a yard. Find the number of feet in 5 yards. Find the number of yards in 12 feet. Find the number of feet in y yards. Find the number of yards in f feet.