4. The average speed of a large ant is 300 feet per hour. There are 12 inches in one foot, and 5,280 feet in a mile.

   a. How many miles will an average large ant travel in a year?

   $$\frac{300\,ft}{1\,hr} \cdot \frac{24\,hr}{1\,day} \cdot \frac{365\,days}{1\,year} \cdot \frac{1\,mile}{5,280\,ft} = 497.7\ miles/year$$

   b. How many inches will this ant travel in a second?

   $$\frac{300\,ft}{1\,hr} \cdot \frac{12\,in}{1\,ft} \cdot \frac{1\,hr}{60\,min} \cdot \frac{1\,min}{60\,sec} = \frac{300 \cdot 12}{60 \cdot 60}\ in/sec$$
   $$= \boxed{1\,in/sec}$$

5. Woodland market is selling 3 packs of toothpicks for $.87. How much will 10 packs of toothpicks cost at this price? Round your answer to the nearest cent.

   $$\frac{3}{.87} = \frac{10}{x}$$
   $$3x = 8.7$$
   $$x = 2.9$$
   10 packs cost $2.9

Sample problems that can appear on the non-calculator section. This means that you leave your final answers in <u>simplified fractions</u>.

6. Solve the equations

   a. $\dfrac{x-3}{6} - \dfrac{4x}{5} = 2$

   $$5(x-3) - 4x \cdot 6 = 60$$
   $$5x - 15 - 24x = 60$$
   $$-19x = 75$$
   $$x = -\frac{75}{19}$$

   b. $\dfrac{3+y}{4} = \dfrac{-y}{11}$

   $$-4y = 11(3+y)$$
   $$-4y = 33 + 11y$$
   $$15y = 33$$
   $$y = \frac{33}{15} = \boxed{\frac{11}{5}}$$