

1) In 2013, 32 NCAA female student athletes were drafted to professional basketball teams. That is out of almost 16,000 college basketball players. If there are 400 college basketball players in a particular state, how many of them are likely to get drafted to a pro team? (Answer as a fraction, then round to the nearest whole number.)

(Source: [http://www.ncaa.org/sites/default/files/Probability-of-going-pro-methodology\\_Update2013.pdf](http://www.ncaa.org/sites/default/files/Probability-of-going-pro-methodology_Update2013.pdf))

$$\frac{\text{drafted} \rightarrow 32}{\text{total} \rightarrow 16000} = \frac{x}{400}$$

$$14 \cdot \frac{32}{160} = x$$

$$\frac{4}{5} = x \quad \text{or} \quad x \approx 1 \text{ person}$$

2) In 1.5 hours, a single small bat can catch 1800 insects. If the bat hunts for 2 hours at this rate, how many insects can it catch? (Source: <http://www.corsinet.com/trivia/a-triv.html>)

$$\frac{\text{hours} \rightarrow 1.5}{\# \text{ insects} \rightarrow 1800} = \frac{2}{x}$$

$$1.5x = 3600$$

$$1.5 \overline{) 3600} \begin{array}{r} 2400 \\ -30 \\ \hline 60 \\ -60 \\ \hline 000 \end{array}$$

$$x = 2400 \text{ insects}$$

3) A person walking 600 steps burns about 30 calories. How many steps should this person walk to burn 95 calories? (This is for a 150 pound person walking 100 steps a minute, about 3mph.) (An apple has about 95 calories.)

(Source: <http://www.livestrong.com/article/318593-how-many-calories-do-you-lose-per-600-walking-steps/>)

$$\frac{\text{steps} \rightarrow 600}{\text{calories} \rightarrow 30} = \frac{x}{95}$$

$$95 \times 20 = 1900$$

$$1900 = x \text{ calories}$$

4) An albatross can doze off while it is flying. It does so at a speed of 1100 ft every 30 seconds. How many seconds of snoozing/flying at this rate would it take to travel 5280 ft? (5280 ft is 1 mile.) (Source: <http://www.corsinet.com/trivia/a-triv.html>)

$$\frac{\text{ft} \rightarrow 1100}{\text{sec} \rightarrow 30} = \frac{5280}{x}$$

$$110x = 15840$$

$$x = 144 \text{ seconds}$$

$$\begin{array}{r} 3x \text{ LCD} \\ 5280 \\ \times 3 \\ \hline 15840 \\ 11 \overline{) 1584} \\ \underline{-11} \\ 48 \\ \underline{-44} \\ 44 \\ \underline{-44} \\ 0 \end{array}$$

5) In 2013, out of almost 18,000 college basketball players, 46 NCAA were drafted to professional basketball players. How many of them are likely to be drafted to a professional basketball team? (Answer as a mixed number.) (Source: [http://www.ncaa.org/sites/default/files/Probability-of-going-pro-methodology\\_Update2013.pdf](http://www.ncaa.org/sites/default/files/Probability-of-going-pro-methodology_Update2013.pdf))

(Note: You could have reduced  $\frac{18,000}{46}$  to  $\frac{9000}{23}$  but I assumed that few people would think of this. It would make the LCD 23x, but you would get the same answer.)

$$\frac{\text{total} \rightarrow 18000}{\text{drafted} \rightarrow 46} = \frac{500}{x}$$

$$18,000x = 23,000$$

$$x = 1\frac{5}{18} \text{ or } x \approx 1 \text{ person}$$

$$\begin{array}{r} 46x \text{ LCD} \\ 500 \\ \times 46 \\ \hline 3000 \\ 20000 \\ \hline 23000 \end{array}$$

6) A recipe for pancakes calls for  $3\frac{1}{2}$  teaspoons of baking powder, and it says that it serves 8 people. If you want to make the recipe for 14 people, how much baking powder should you use? (Write answer as a mixed number.)

$$\frac{\text{tsp} \rightarrow 3\frac{1}{2}}{\text{serves} \rightarrow 8} = \frac{x}{14}$$

$$\frac{7}{2} \cdot \frac{1}{8} = \frac{7}{16} \rightarrow \frac{14}{8} \cdot \frac{7}{16} = \frac{x}{14} \cdot 14$$

$$\frac{49}{8} = x$$

$$x = 6\frac{1}{8} \text{ tsp, (teaspoons)}$$