## Problem

Below are the statistics for Wayne Gretzky's first three years in the NHL, and Sidney Crosby's first two years. (The last column +/- gives goals scored by the player's team while he was on the ice minus goals scored by the opposing team while he was on the ice.)

Wayne Gretzky (The Great One)

| Year | Team | Games Played | Goals | Assists | Points | Penalty Minutes | +/- |
|------|------|--------------|-------|---------|--------|-----------------|-----|
| 1979-80 | Edmonton | 79 | 51 | 86 | 137 | 21 | +15 |
| 1980-81 | Edmonton | 80 | 55 | 109 | 164 | 28 | +41 |
| 1981-82 | Edmonton | 80 | 92 | 120 | 212 | 26 | +81 |

Sidney Crosby

| Year | Team | Games Played | Goals | Assists | Points | Penalty Minutes | +/- |
|------|------|--------------|-------|---------|--------|-----------------|-----|
| 2005-06 | Pittsburg | 81 | 39 | 63 | 102 | 21 | -1 |
| 2006-07 | Pittsburg | 79 | 36 | 84 | 120 | 28 | +10 |

a) Calculate Wayne Gretzky's total points in his first three years, and Sidney Crosby's total points in his first two years. How many points would Sid have had to score in 2007-08 to equal Wayne's total for his first three years?

b) In 1981-82, how many points per game did the "Great One" score? How many goals per game? Round your answers to the nearest tenth.

c) For each player, what percentage of their points were goals in their first year in the league? Round your answers to the nearest tenth.

*E*xtension:

1. Who is the better player? Justify your answer using information from the given statistics, your answers above, and any aditional calculations you think are relevant. (You may also wish to look up Crosby's statistics for 2007-08, to see how the two players compare did after three years.)

# Hints

**Part b)**

**Hint 1 -** If a player scored 20 points in 10 games, how many points per game did she score?

*Suggestion:* To help students with parts b) and c), you may wish to review how to round decimal numbers to the nearest tenth.

# Solution

a) Gretzky's total for his first three years is 513 points, while Crosby's total for his first two years is 222 points. So Crosby will need 513 - 222 = 291 points in 2007-08 to equal Gretzky's record.

b) Gretzky's 1981-82 points per game equals $\frac{212}{80} = 2.65\ldots \approx 2.7$, and his goals per game equals $\frac{92}{80} = 1.15\ldots \approx 1.2$. (Note: The symbol '$\approx$' means 'approximately equals'.)

c) The percentages of points that were goals are:
for Gretzky, in 1979-80, $\frac{51}{137} \times 100\% \approx 37.2\%$;
for Crosby, in 2005-06, $\frac{39}{102} \times 100\% \approx 38.2\%$.

*Extension:*

Encourage students to explore the statistics more fully before making a decision about who they think is the better player (e.g, repeat b) and c) for other years, and both players). There will no doubt be an emotional element to these discussions!