NHL Solution

(a) All of the probabilities are between 0 and 1 and they add to 1, so this is a legitimate probability distribution.

(b) The histogram is skewed to the right, which means that the majority of games are relatively low scoring. It is pretty unusual for a team to score 6 or more goals.
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(c) $P(X \leq 6) = P(X = 6) + P(X = 7) + P(X = 8) + P(X = 9) = 0.041 + 0.015 + 0.004 + 0.001 = 0.061$. 
Mean:  = 2.851

The mean number of goals for a randomly selected team in a randomly selected game is **2.851**. If you were to repeat the random sampling process over and over again, the mean number of goals scored would be about 2.851 in the long run.
The standard deviation of $X$ is 1.63. On average, a randomly selected team’s number of goals in a randomly selected game will differ from the mean by about 1.63 goals.
3 year old weights

a. \( \text{Normcdf} (30, \infty, 30.7, 3.6) = 0.5771 \)

b. \( \text{Normcdf} (0, 24.99999, 30.7, 3.6) = 0.056673 \)

The pediatrician should start to be concerned since only 5.67% of girls weigh less than this child. (OR Since more than 5% of girls weigh less than this child, the pediatrician should not worry, yet.)