CC8   Name_____
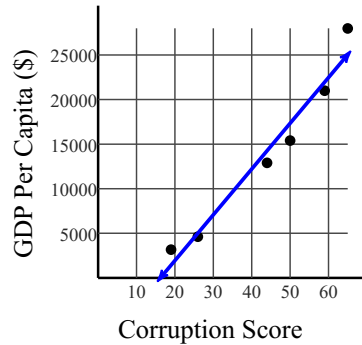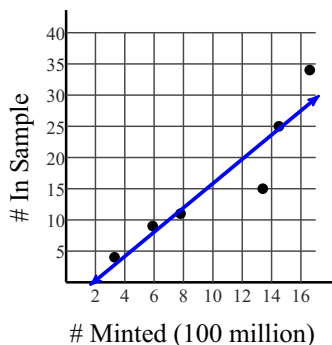# 8.SP.3 Test Review
Date_____   Period_____

1) Economists have found that the amount of corruption in a country's government is correlated to the gross domestic product (GDP) per capita of that country. This can be modeled by $y = 513x - 8320$ where x is the corruption score and y is GDP per capita in dollars. Corruption scores range from 0 to 100 with 0 being highly corrupt and 100 being least corrupt.

a) What does the slope of the line represent?

b) What does the y-intercept of this function represent?

c) Using this model, a country with a corruption score of 77 would have what GDP per capita? Round your answer to the nearest dollar.

d) A GDP per capita of $12,000 corresponds to what corruption score, according to the model? Round your answer to the nearest whole number.

2) The number of nickels from a particular year found in a sample of 1,000 is related to the number of nickels that were minted that year. This can be expressed as $y = 1.95x - 3.62$ where x is the number of nickels minted in a particular year in hundreds of millions and y is the number of nickels from that year in a sample of 1,000.

Minted (100 million)

a) What does the slope of the line represent?

b) What does the y-intercept of this function represent?

c) According to the model, how many nickels from a year in which 21 hundred million were minted would you expect to find in a sample of 1,000? Round your answer to the nearest whole number.

d) A sample of 1,000 nickels contains 20 from a particular year. According to the model, how many would you expect to have been minted that year? Round your answer to the nearest tenth of a hundred million.

Answers to 8.SP.3 Test Review

1) Slope: The increase in GDP per capita for every increase of one in corruption score
   Y-intercept: The GDP per capita of a country with a corruption score of zero
   $31,181, 40
2) Slope: The additional number of nickels from a particular year you'd expect to find in a sample of 1,000 for every additional hundred million minted
   Y-intercept: Number of nickels in a sample of 1,000 from a year in which none were minted
   37 nickels, 12.1 hundred million nickels