MATH 140 **Name** _____ **Date:**

Worksheet: Parameters of Interest

The Scene: In this activity we identify parameters of interest and statistics computed in several research scenarios.

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1. A researcher wants to test whether workers in the Willamette Valley commute less than 20 minutes, on average. To test the claim, she gathers a simple random sample of 100 Willamette Valley residents and find the average commute time for the sample is 18.4 minutes.

   (a) State the population of interest.

   (b) State the parameter of interest.

   (c) State the size of the sample.

   (d) State the point estimate for the parameter of interest generated by the sample.

2. The president wonders whether Linfield students sleep less than 8 hours a night, on average. To investigate a crack team of student statisticians gathers an independent sample of 45 Linfield students. They find that the sample mean is 7.7 hours.

   (a) State the population of interest.

   (b) State the parameter of interest.

   (c) State the size of the sample.

   (d) State the point estimate for the parameter of interest generated by the sample.

3. What is the average margin of victory in Major League Baseball games? From the universe of all regular season MLB games played since 1950, a researcher gathers an independent sample of 5,000 games and finds the average margin of victory in these 5000 games is 2.45 runs.

   (a) State the population of interest.

   (b) State the parameter of interest.

(c) State the size of the sample.

(d) State the point estimate for the parameter of interest generated by the sample.

4. What proportion of car owners in Oregon have a car that is either all electric or hybrid? To investigate, Samwise Gamgee looks at a sample of 200 Oregon car owners and finds 23 of them own such a vehicle.

   (a) State the population of interest.

   (b) State the parameter of interest.

   (c) State the size of the sample.

   (d) State the point estimate for the parameter of interest generated by the sample.

5. In a survey of 500 Oregonians, 48% of the respondents reported that they have seen untrue or doubtful information on the internet in the last three months.

   (a) is 48% a parameter or a statistic? Hint: Is 48% derived from a sample, or is it a value representing an entire population?

   (b) If you answered that 48% is a statistic, then it is a point estimate for a parameter describing an entire population. What is the underlying parameter, and what is the population of interest? If you answered that 48% is a parameter, rethink that answer and repeat (b) :)