

MAT1190 EXAM 1

SPRING 2014

Each problem is worth 10 points. You will be provided with an examination book for your answers. Leave at least one blank line before each problem. Write on one side of the page only. Show all your steps, label and simplify your answers. No calculators are allowed.

1. Assume p is a statement. Make a truth table for the following compound statement:

p or not p

2. Perform the following calculation. Write your answer in scientific notation.

320 thousand times 17 million

3. Make a table in your booklet as below. Fill the table in your booklet completely.

Fraction	Percent	Decimal
1/7		
	65%	
		2.15

4. The congressional delegation of California increased from 30 in 1950 to 53 in 2010. Find the absolute change and the percentage change in the size of the delegation.

5. How many people do you need in a room to guarantee that at least two of them share a first initial? Give an explanation of your answer in a complete sentence.

6. Compute how many atoms are in 9 cubic centimeters (cc) of tin by using the following conversion factors: 1 mole = 6×10^{23} atoms; 126 grams of tin = 1 mole of tin; 1 cc of tin = 7 grams of tin

7. If you drive 60 mph for 3 hours and then return by the same route at 45 mph what is your average speed for the entire trip?

8. Draw Venn diagrams with two circles showing the relationship between all high school track participants and all high school tennis players. Provide an explanation in complete sentences of the diagram you draw.

9. The following argument is invalid. Write an explanation in complete sentences explaining why. **Bonus:** Make a truth table proving this argument is invalid.

Premise: Novels written in the 19th century were not written on a word processor.

Premise: Jake finished his novel last year.

Conclusion: Jake's first novel was written on a word processor.