Math 1333 Chapter 4 & 5 Unit Test 1

Name: _____   Section:_____

Be sure to show all your work and circle your answer.

Solve the following:

1a) $\dfrac{3.2\,ft}{4.9\,ft} = \dfrac{4.8\,ft}{x}$

1b) $\dfrac{3\frac{2}{3}}{x} = \dfrac{2\frac{1}{5}}{4.5}$

2)   Write 52% as a fraction and as a decimal.

3)   Write $\dfrac{7}{8}$ as a decimal and as a percent.

Complete the following tables:

4)

	Number of Teeth on gear 1	Number of Teeth on gear 2	RPM of gear 1	RPM of gear 2
a)	20	55	220	
b)		40	700	280

5)

	Measurement	Tolerance	Percent Tolerance
a)	2.875 in	± 0.046 in	
b)	3.500 in		± 0.8%

Perform the indicated operation. Round to the correct precision or accuracy:

6a) 6.2 psi × 4.31 in^2

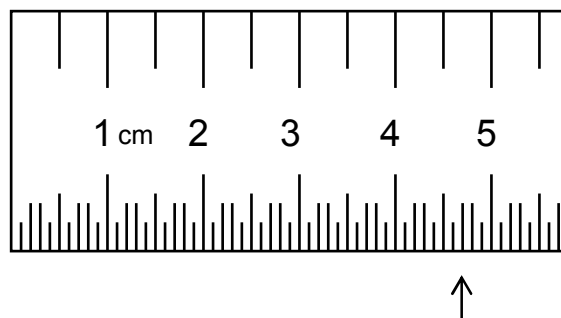6b) 0.13 m + 2.5 m + 1.416 m

7a) $8\frac{1}{4}$ ft – 3.4 ft

7b) 790 mi ÷ 41.6 gal

Read the following measuring device:

8a)

8b)

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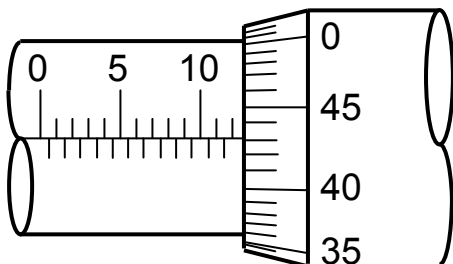
Convert the following. Show your justification and round off the the appropriate number of significant digits:

9a) Convert 2.3 yd to in.

9b) Convert 521 cm to m.

10a) Convert 75˚ F to C.

10b) Convert 37˚ C to F.

11a) Convert 0.087 g to mg.

11b) Convert 28 fur to mi.

12) Convert 63 mph to ft/sec.

13) Convert $\frac{\$3.23}{L}$ to $ per gal.

14) Convert 15.0 psi to g per cm².

Solve the following:

15) If a 2.75 hp engine delivers 2.31 hp to an air compressor, what is the engine's efficiency?

16) If an 8.0-in wide by 12-in long picture is reduced to a width of 3.2 in, what is the length of the reduced picture?

17) Due to inflation, the average grocery bill for a family of four has risen 35% over the past two years. If the Rodriguez's monthly grocery bill is currently $1031.40, what was their monthly grocery bill two years ago?

18) The cylinder displacement of an engine is 350 in³. What is the displacement in liters?

19) Katz's Katering Service needs 36 pounds of fresh greens for a large banquet. To ensure they have enough because of spoilage, they order 48 pounds of fresh greens. What percent of the fresh green do they expect to lose to spoilage?

20) Four out of five dentists surveyed recommended sugarless gum to their patients that chewed gum. If 280 dentists recommended sugarless gum, how many were surveyed?

Answers:

1a) x ≈ 7.4 ft   1b) x = 7.5   2) $\frac{13}{25}$, 0.52   3) 0.875, 87.5%   4a) 80 rpm 4b) 16 teeth

5a) ± 1.6%   5b) ± 0.028 in   6a) ≈ 27 lb   6b) ≈ 4.0 m   7a) ≈ 4.9 ft   7b) ≈ 19 mpg

8a) 12.43 mm   8b) 4.7 cm or 47 mm   9a) ≈ 83 in   9b) 5.21 m   10a) ≈ 24˚ C   10b) ≈ 99˚ F

11a) 87 mg   11b) 3.5 mi   12) ≈ 92 ft/sec   13) ≈ $\frac{\$12.20}{gal}$ 14) ≈ 1050 g/cm²

15) 84%   16) 4.8 in   17) $764   18) ≈ 5.7 L   19) 25%   20)   350 dentists

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