Math 1333 Chapter 10 & 12 Unit Test 4

Name: _____ **Section:**_____

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

Convert the following angles into decimal form:

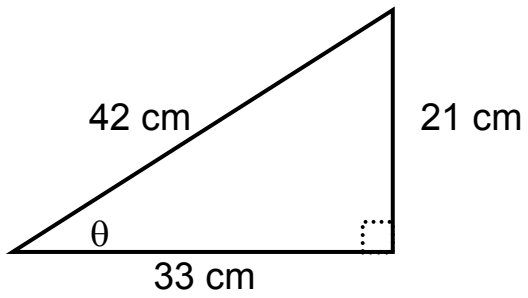
1a) 25˚45' 1b) 73˚21'

Convert the following angles into degrees. Round to the nearest tenth:

2a) 0.8π 2b) 1.5

For the triangle below, find the following:

3)



a) sin θ =

b) cos θ =

c) tan θ =

Given a sector with a central angle of 48˚ and a radius of 5 in:

4a) Find the arc length. Round to three significant digits.
4b) Find the area. Round to three significant digits.

Evaluate the following. Round to three significant digits:

5a) sin 65˚22' 5b) cos 0.8π

Solve the following. Round to the nearest minute:

6a) sin x = 0.816 6b) tan x = 2.365

Solve the following. Round to three significant digits:

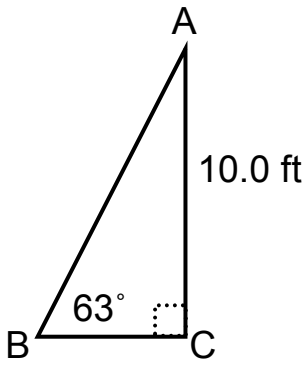
The times in a sample of six customer service calls during the last hour were 5.7 minutes, 1.3 minutes, 8.2 minutes, 1.7 minutes, 8.2 minutes, and 3.9 minutes.

7) Find the mean, the median, and the mode of the length of time of a call.
8) Find the range and the standard deviation of the length of time of a call.

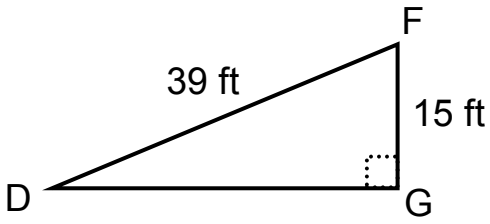
Fall, 2008

Finding the missing sides and angles of the following. Round all sides to the nearest tenth and all angles to the nearest minute:

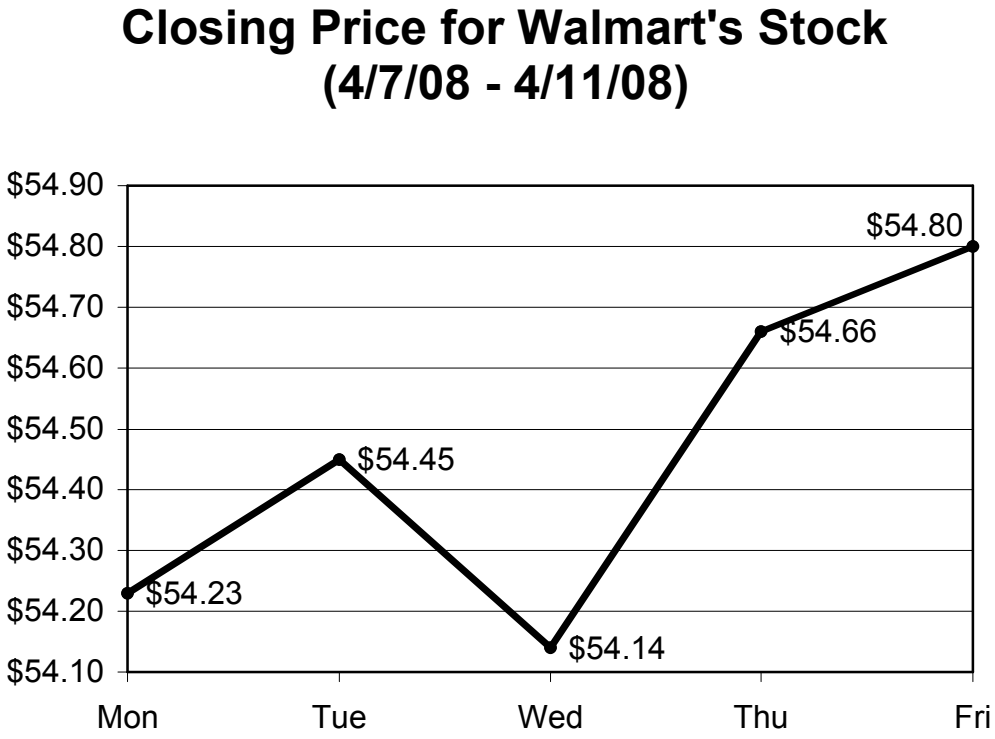
9)



10)



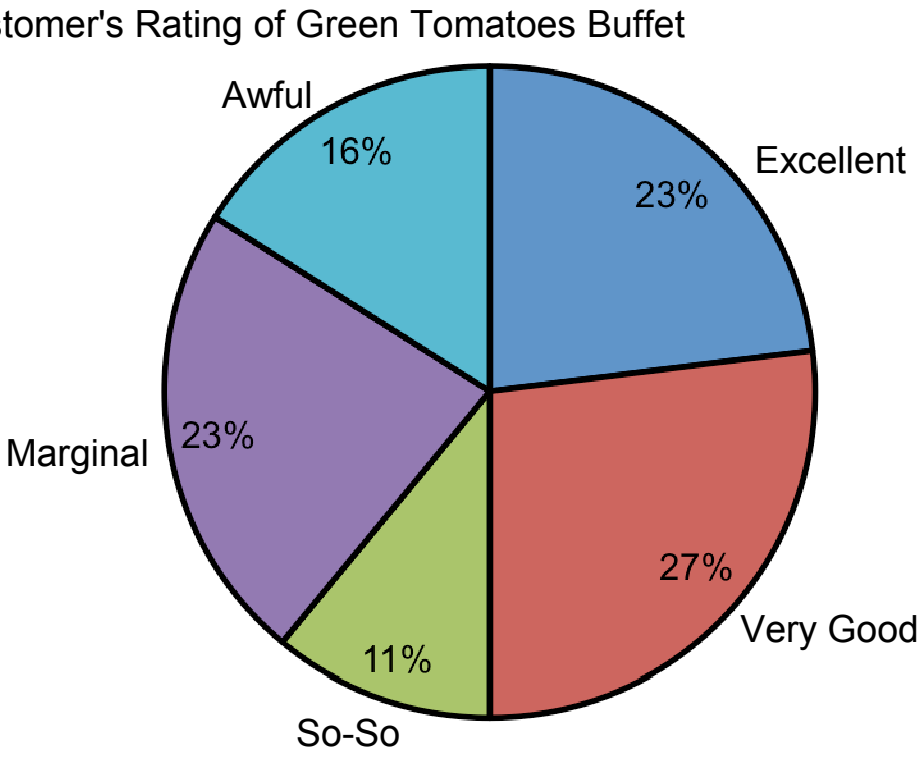
Use the graph below to solve the following:



11) Find the mean and mode price per share of Walmart's stock during the week.

12) Find the percent change (to the nearest tenth) of Walmart's price per share from the close of Monday to the close of Friday.

Use the graph below to answer the following:



13) If 150 people were surveyed, how many thought the food was awful?

14) If 88 people thought the food was very good, how many were surveyed?

Solve the following:

15) A road rises 175 ft over a horizontal distance of 2500 ft. What is the angle of elevation? (round to the nearest tenth).

16) Two cities, San Antonio and New York, are 1580 miles apart. To avoid a bad storm, a pilot took a course that was 17˚ further south from San Antonio and then later made a 90˚ turn to fly towards New York. How far (to the nearest mile) did the pilot have to fly to reach New York?

Solve the following:

17 – 20)
A local company provides free tax services for families with adjusted gross income (to the nearest thousand) under $64,000. During the last tax season, they served the following number of customers in each income level:

Adjusted Gross Income	Frequency F	Midpoint M	FM Products	$(M - \overline{x})$	$(M - \overline{x})^2$	$F(M - \overline{x})^2$
$0K – $15K	249					
$16K – $31K	163					
$32K – $47K	52					
$48K – $63K	36					

n = Sum FM = Sum of $F(M - \overline{x})^2$ =

Complete the chart above and find the grouped mean and the grouped standard deviation (round to the nearest tenth).

Answers:

1a) 25.75° 1b) 73.35° 2a) 144° 2b) 85.9° 3a) $\frac{1}{2}$ 3b) $\frac{11}{14}$

3c) $\frac{7}{11}$ 4a) S = 4.19 in 4b) A = 10.5 in^2 5a) 0.909 5b) – 0.809

6a) 54°41' 6b) 67°5' 7) Mean ≈ 4.8 min, Median = 4.8 min, Mode = 8.2 min

8) Range = 6.9 min, Standard Deviation ≈ 3.1 min

9) m∠A = 27°, BC ≈ 5.1 ft, AB ≈ 11.2 ft

10) DG = 36 ft, m∠D ≈ 22° 37', m∠F ≈ 67°23'

11) Mean ≈ \$54.46 per share, Mode = None 12) It increased by ≈ 1.1%.

13) 24 people said it was awful. 14) ≈ 326 people were surveyed.

15) The angle is ≈ 4°. 16) The pilot flew 1973 miles.

17 – 20)

Adjusted Gross Income	Frequency F	Midpoint M	FM Products	$(M - \bar{x})$	$(M - \bar{x})^2$	$F(M - \bar{x})^2$
\$0K – \$15K	249	7.5	1868	– 12	144	35856
\$16K – \$31K	163	23.5	3831	4	16	2608
\$32K – \$47K	52	39.5	2054	20	400	20800
\$48K – \$63K	36	55.5	1998	36	1296	46656

n = 500 Sum FM = 9750 Sum of $F(M - \bar{x})^2$ = 105920

$\bar{x}$ = \$19.5K s ≈ \$14.6K