

**MAT 1180**  
**Review Sheet**

Fall 2007  
W. Colucci and K. Reaves

Round ALL decimal answers to TWO places.  
Reduce ALL fractions to lowest terms.

8/707

**#1** Answer the following word problems. Use a proportion for a and b.

- a) If it costs \$35 for 12 gallons of gas, how much does it cost for 9 gallons?
- b) If it costs \$22 for 9 gallons of gas, how much gas can you buy for \$41?
- c) A \$400 stereo is on sale for 31% off. Find the total cost.
- d) You buy a \$350 TV and the sales tax is 6.25%. Find the total cost.

**#2** a) Find the Area and Circumference of a circle with radius 7.

b) Find the Area and Circumference of a circle with diameter 8.

**#3** Perform the indicated operations and express your answer in simplest Radical form:

a)  $2\sqrt{52} - 3\sqrt{637}$                       b)  $5\sqrt{2} + 2\sqrt{18} - 3\sqrt{50}$                       c)  $2\sqrt{27} - \sqrt{75} + 4\sqrt{3}$

**#4** Rationalize the Denominator and simplify if possible:

a)  $\frac{\sqrt{4}}{\sqrt{10}}$                       b)  $\frac{\sqrt{8}}{\sqrt{18}}$                       c)  $\frac{\sqrt{2}}{\sqrt{12}}$                       d)  $\frac{\sqrt{6}}{\sqrt{8}}$                       e)  $\frac{\sqrt{12}}{\sqrt{24}}$

**#5** Solve the following System of Equations for x and y by elimination:

a)  $x + y = -1$                       b)  $x + 2y = 11$                       c)  $2x + 3y = 4$   
    $x - y = 13$                            $-2x - 3y = -17$                            $3x - y = 17$

**#6** A fair coin is tossed two times in succession. Find the probability of getting:

- a) two tails                      b) at least one tail                      a head on the first toss

If one card is randomly selected from a standard 52-card deck, what is the probability of:

- d) selecting a King or a Jack                      e) selecting a number                      f) selecting a picture card (jack, king, queen)  
g) selecting a picture card or a red ten                      h) selecting a number or a Queen                      i) not selecting a number

**#7** Find the Mean, Median, Mode, Range and Midrange for the following data.

Round your answers off to the nearest tenth: 16, 9, 7, 16, 4, 13, 4, 16, 17, 23

**#8** The Frequency distribution below indicated the scores of 28 people taking a statistics test.

Construct a **Frequency Polygon** and **Histogram** for the following distribution:

Exam Score	Frequency
50-59	3
60-69	8
70-79	5
80-89	10
90-99	2

**#9** Find the **Standard Deviation** for the following sets of Data:

- a) 6, 6, 10, 12, 16                      b) 3, 5, 8, 11, 18

**#10** Heights of children are **normally** distributed with a mean of 40 inches and a standard deviation of 4 inches. What Percentage of the children have heights:

- a) Above 43 inches?                      b) Below 41 inches?                      c) Between 37 and 45 inches?  
 d) Between 42 inches and 48 inches?                      e) Between 33 and 36 inches?

**#11** Solve the following equations by using the LCD to remove the denominators:

a)  $\frac{x+2}{3} - \frac{x-1}{2} = \frac{5}{6}$                       b)  $\frac{x+1}{2} - \frac{x}{3} = \frac{2}{3}$                       c)  $\frac{x+1}{4} - \frac{x-3}{12} = \frac{x+5}{3}$

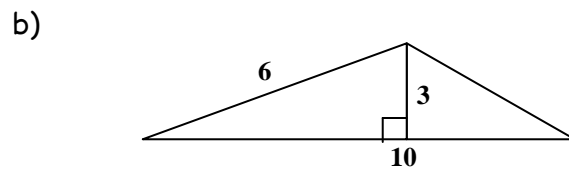
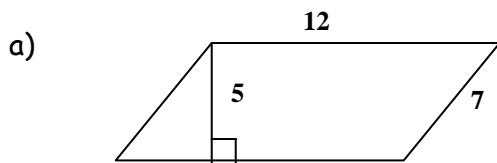
**#12** Evaluate and write using Scientific notation:

a)  $\frac{20,500}{.002}$                       b)  $\frac{28.08}{520}$                       c)  $(1.9)(24.5)$                       d)  $\frac{1.750}{87500}$

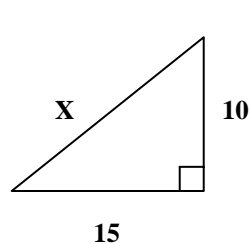
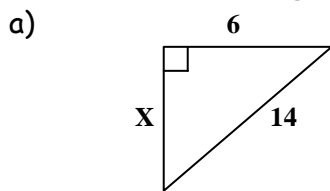
**#13** Solve the following systems of linear inequalities:

a)  $x+y \leq 3$   
 $4x-2y \geq 4$                       b)  $x+2y \leq 2$   
 $3x-2y \geq -6$                       c)  $-x-y \leq 3$   
 $x-y \leq -4$

**#14** Find the Area for the following shapes:



**#15** Find the missing side of the following Right Triangles:

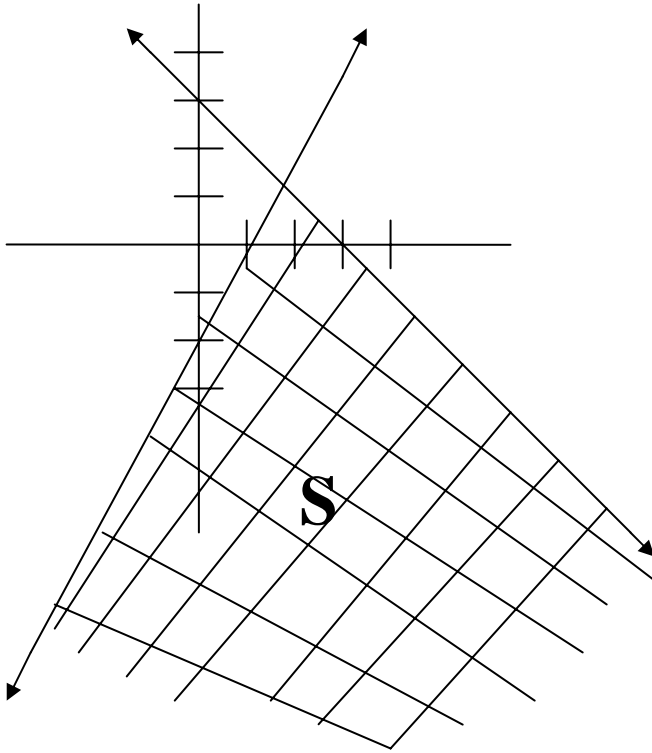


**#16** Answer each of the following problems:

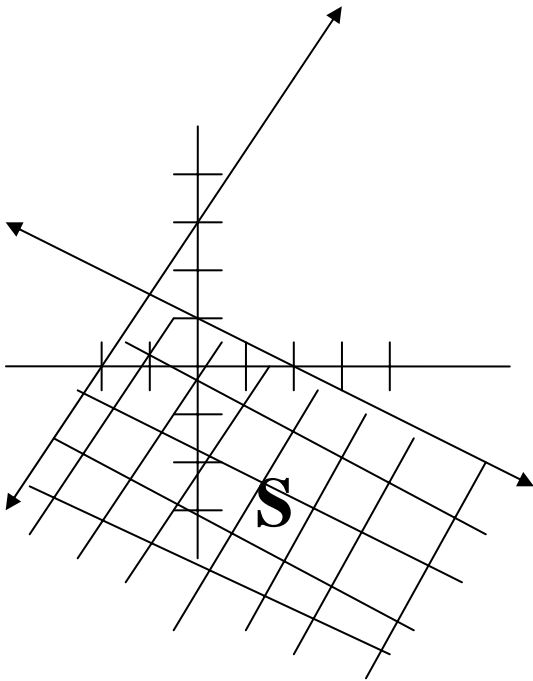
- a) How many different ways can you answer a 5 question multiple choice exam if each question has 4 choices and you leave no answers blank?  
 b) A rental car agency charges \$150 plus .25 cents per mile to rent a car. How many miles can you drive for \$600? How many miles can you drive for \$350?  
 c) A rental car agency charges \$90 plus .15 cents per mile to rent a car. How much will it cost to drive 750 miles? How much will it cost to drive 400 miles?



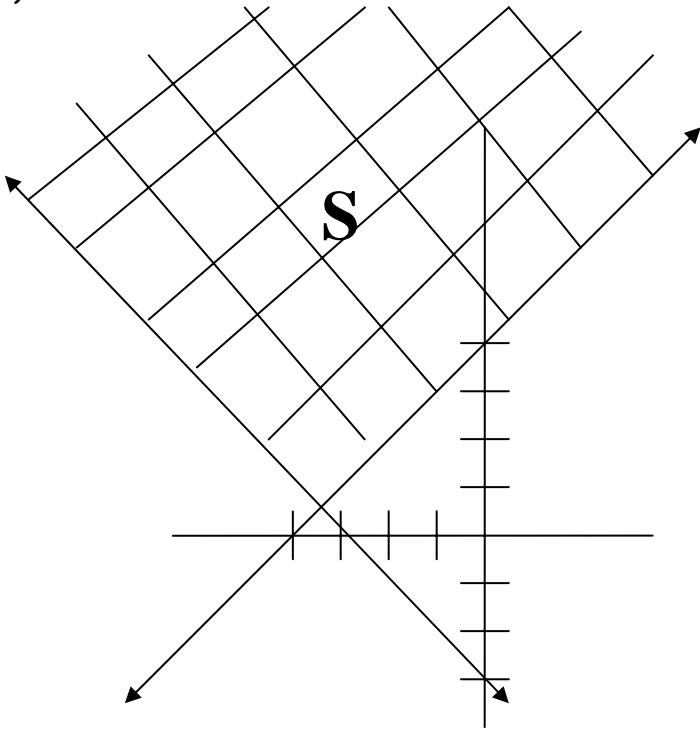
#13 a)



b)



c)



#14 a)  $A = 60$  sq. units

b)  $A = 15$  sq. units

#15 a)  $x = 4\sqrt{10}$

b)  $x = 5\sqrt{13}$

#16 a) 1024   b) 1800 miles for \$600, 800 miles for \$350   c) \$202.5 for 750 miles, \$150 for 400 miles