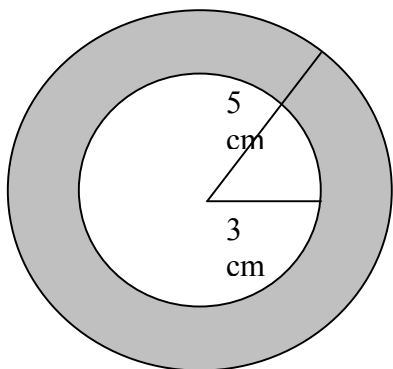


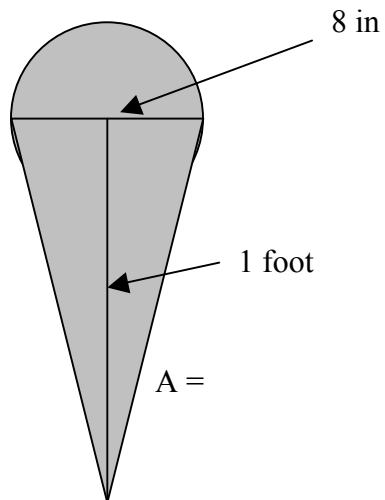
Final Review

For full credit **show all your work**. Each problem is good for you.

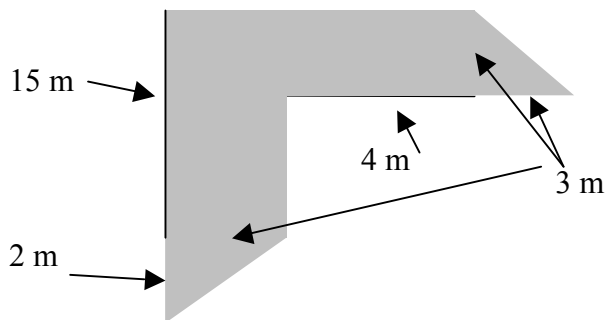
1. Find the area of the shaded portion in each figure:



A =

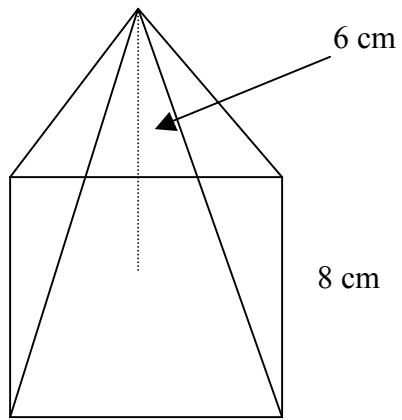


A =



A =

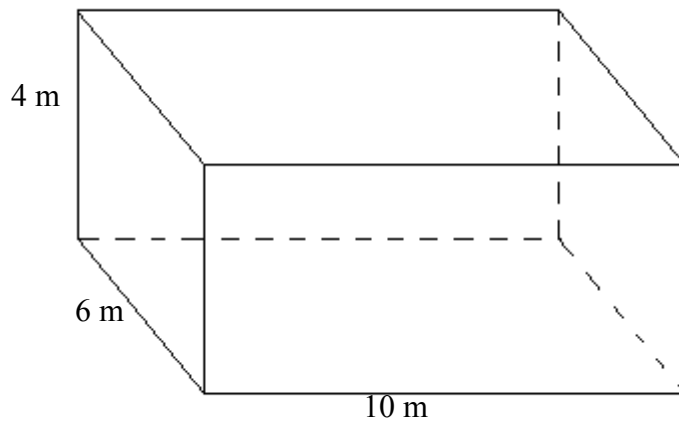
2. Find the surface area and volume of each shape:



8 cm  
Right square pyramid

SA =

V =



SA =

V =

3. Construct a box and whisker plot for the given quiz score data:

14    20    18    20    18    19    18    19    20    20    15    18    19    14  
20    17    19    19    18    16    16    11

What is the:

Mean =

$Q_1 =$

Median =

$Q_2 =$

Mode =

$Q_3 =$

Range =

IQR =

Outliers:

4. Consider a regular deck of 52 cards with 13 cards (including face cards) in each of 4 suits. Use the following events to determine the probabilities:

A: Selecting an ace

B: Selecting a black card

C: Selecting a club

D: Selecting a “digit-card” (*i.e.* not an ace or face card)

Calculate:

$P(A) =$

$P(A \cup B) =$

$P(A \cup D) =$

$P(A \cap B) =$

$P((A \cup D) \cap C) =$

5. Suppose there are 7 green, 4 blue, and 1 white chip in a bag and an event consists of reaching into the bag drawing out a chip then, without replacing the first chip, drawing a second chip out of the bag. (Note: when you are finished all that is important is the color of the chips – order does not matter.)

Calculate:

$$P(GG) =$$

$$P(GB) =$$

$$P(GW) =$$

$$P(WW) =$$

$$P(BB) =$$

6. Suppose there are 7 green, 4 blue, and 1 white chip in a bag and an event consists of reaching into the bag drawing out a chip then, replacing the first chip and drawing a second chip out of the bag. (Note: when you are finished all that is important is the color of the chips – order does not matter.)

Calculate:

$$P(GG) =$$

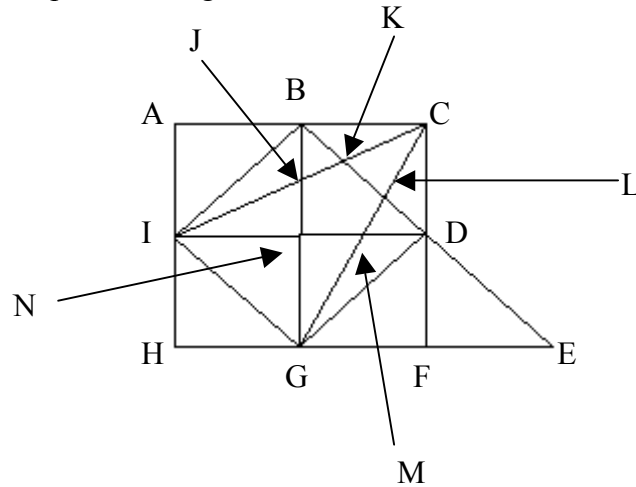
$$P(GB) =$$

$$P(GW) =$$

$$P(WW) =$$

$$P(BB) =$$

7. Find the following shapes in the figure.



Use the names T1, T2, ... or Q1, Q2 to mark your answers.

T1	ABI
T2	ACI
T3	BCI
T4	BDG
T5	BDN
T6	BCD
T7	BIA
T8	BNI
T9	MDG
T10	BCK

T11 - ING  
 T12 - DEF  
 T13 - IGH  
 T14 - NDG

Q1	ABNI
Q2	ABGH
Q3	ACFH
Q4	BCDN
Q5	BDGI
Q6	BEGI
Q7	CMNJ
Q8	INGH
Q9	DEFG
Q10	NDFG

Q11

Example: Two scalene triangles: Solution: T9 and T10

If you think you additional triangles, or quadrilaterals, then you may add them to the list (under T11 or Q11, T12, ...).

A Five squares:

B. Nine congruent isosceles right triangles:

C. A parallelogram that is not a square:

D. An isosceles triangle that is not a right triangle:

E. A trapezoid that is not isosceles:

F: A right scalene triangle:

8) The fraction  $\frac{6}{11}$  will have at most how many digits in the repeating part of its decimal representation Base 10? What is the Base 10 decimal representation of this fraction?

9) Consider the following numbers as being in the denominator of a fraction. Classify each number as one of:

- A. decimals with this denominator will always terminate.
- B. decimals with this denominator will always repeat.
- C. decimals with this denominator will sometimes terminate and sometimes repeat.

Denominators:

40

41

42

10) Convert the decimal  $0.12\overline{6}$  to a fraction.

11) A box contains two red marbles and three green marbles. An experiment consists of selecting one marble at random from the box and then another without replacement and order does **not** matter.

\* List the sample space.

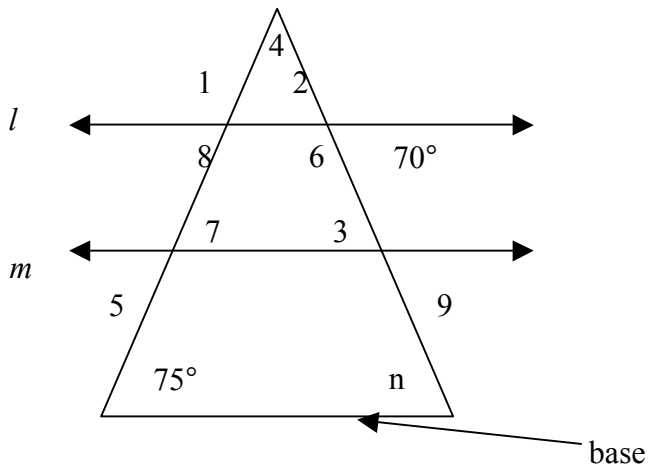
\* What is the probability of obtaining one red and one green marble?

\* What is the probability that both marbles will be green?

12) Given:  $l \parallel m \parallel$  base of Big Triangle

Find the size of the angles:

- |              |              |
|--------------|--------------|
| $\angle 1 =$ | $\angle 2 =$ |
| $\angle 3 =$ | $\angle 4 =$ |
| $\angle 5 =$ | $\angle 6 =$ |
| $\angle 7 =$ | $\angle 8 =$ |



13) Complete the table with what's being measured in column 1, an example of an English unit in column 2, and an example of a Metric unit in column 3.

Measurement Concept	English unit	Metric Unit

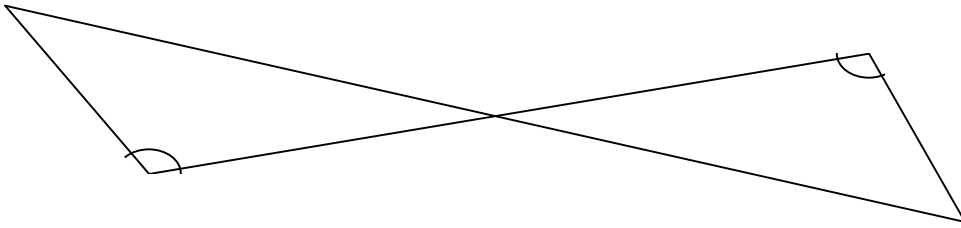
14-16) A container holds water at its densest state. Give the missing units in the table below:

14) Volume  
 \_\_\_\_\_  $\text{cm}^3$   
 23 \_\_\_\_\_  
 67  $\text{cm}^3$  \_\_\_\_\_

15) Capacity  
 \_\_\_\_\_ mL  
 23 L  
 67 \_\_\_\_\_

16) Mass  
 18 g  
 23 \_\_\_\_\_  
 67 \_\_\_\_\_

17) Are the following triangles congruent, similar, or neither? Explain your answer.



18) Decimals can do one of the following. Classify as rational or irrational **and** give an example.

A. Terminating decimal:

B. Repeating decimal:

C. Non-terminating and non-repeating decimal:

19) Convert the Base 10 decimal  $0.\overline{29}$  to a fraction in Base 10.

20) Convert  $1.1612 \times 10^{-5}$  into standard decimal notation (NOT scientific notation).

21) Convert 0.0000123 into scientific notation.

22) Each year a car depreciates to about 80 percent of its value the year before. What was the original value of a car that worth \$8,000 at the end of three years?

23. Translations

24. Reflections

25. Rotations

26. Scale drawings

27. + / - representations (chip model)