Sample of Material from MAT119 at Broome Community College

This material is for sample purposes only and is not to be considered as an official listing of topics.

1. Draw circles corresponding to the algebraic hierarchy for evaluating the expression

$$3 - 9 \times 15^{\,2} \div 5,$$

then evaluate the expression one operation per line at a time.

2. Write a story whose question is answered by the expression $4x + 2$. Define what x represents, but not as part of your story.

3. Write the following using as few symbols as possible.

a) $\dfrac{1}{y \bullet y \bullet y \bullet y \bullet y}$ b) $x + x + x + x + y - y - y - y - y$

4. Perform the following, using steps as required by a teacher to demonstrate the underlying method to your class.

a) $\dfrac{3}{7} + \dfrac{4}{5}$ b) $(2x - 1)(2x + 1)$

c) $(4x^5 + 5x^4 - 2x + x^5) - (3x^5 - 2x^3 + 4)$

5. Factor out the largest common factor from $12x^3y - 9x^4y + 24x^5y$

6. One of the following three fractions can be reduced nicely. Circle that one and reduce it.

$$\frac{3x}{x+6} \qquad \frac{3x}{3x+1} \qquad \frac{3x}{3x+15}$$

7. Using a diagram, show how to multiply $\dfrac{1}{2} \cdot \dfrac{2}{3}$. Give the final answer in reduced form.

8. Fill in the blank with the most appropriate word. Correct spelling required.

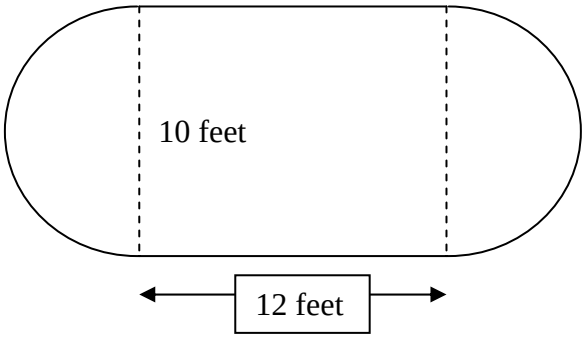
a) A polygon with 6 sides is called a(n) _____.

b) A quadrilateral exactly one pair of parallel sides is called a(n) _____.

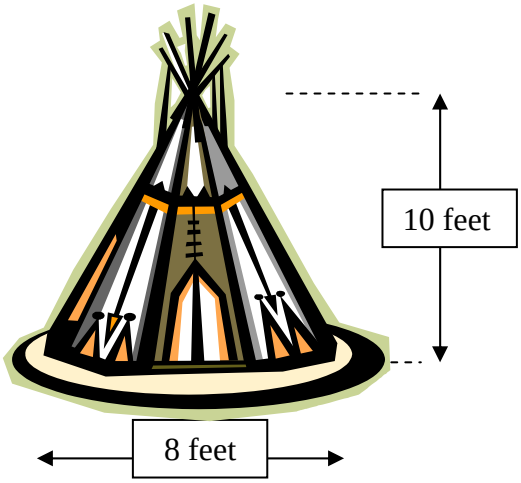
c) A triangle with exactly 2 pairs of sides equal is called a(n) _____.

d) A kite with all four sides equal is called a(n) _____.

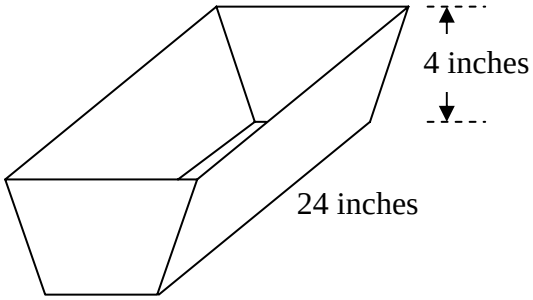
9. Find the perimeter and area of the pool below formed by a rectangle with 2 semicircles attached.



10. A playground teepee is 10 feet tall and 8 feet across. Find the cost of material for the tent and floor if the canvas costs $8.50 per square foot.



11. A flower box is 24 inches long, 14 inches wide at the top, 8 inches wide at the bottom, and 4 inches deep. Find the volume to the nearest integer.



12. Ten hot dogs were selected for a study of their caloric content. The values were: 186, 181, 176, 149, 184, 190, 158, 140, 175, and 148.

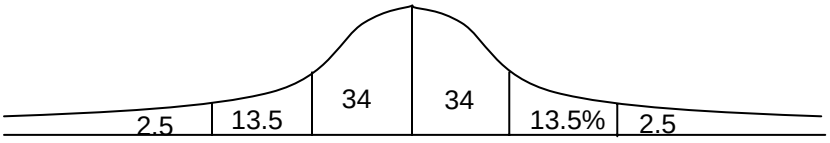
a) Find the mean of the data. b) Find the standard deviation.

c) Find the mode. d) Calculate the five number summary for the data set.

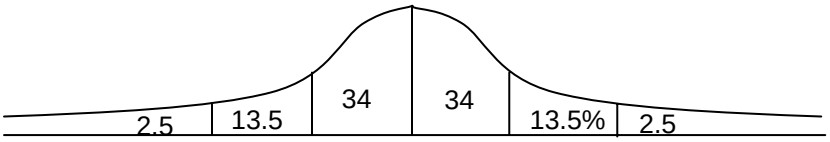
e) Draw the box and whisker plot for the data.

13. A study of candy bars finds their mean weight to be 1.55 oz with a standard deviation of .02 oz. Label the graph appropriately and give the answer.

a) What percentage of candy bars weigh between 1.55 oz and 1.59 oz?



b) How unusual is it to find a candy bar that weighs 1.49 oz?



14. Professor Digit's course policy shows the indicated weights that will be assigned in determining the course average. Calculate the course average for a student who scores a test average of 87%, gets a 92% on the paper, and has a class activity grade of 65%. Show work. (3 pts)

Instrument	**Weight**
Test mean average	60%
Paper	25%
Class Participation	15%

15. A poll of 120 randomly selected tent campers revealed the mean time they plan to keep a tent is 6.5 years with a standard deviation of 2.8 years. Using the outlined steps below, test the claim that mean time for all tent owners is more than 6 years.

a) Symbolically state the claim and null hypothesis:

b) Calculate the z-score for your data.

c) Label the mean and clearly place your z-score in the diagram below.

d) State your conclusion based on confidence levels and your sample.