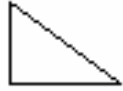


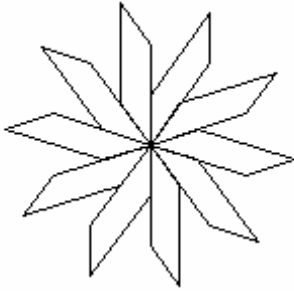
Part I. Short Answer (Two Points Each). Show how you calculate each answer in the space provided for that purpose. Place your answer on the appropriate line in the answer column.

- | | | | | | |
|----|---|----|--------------------------|----|-------|
| 1. | What is 120% of 420? | 2. | 6 is what percent of 48? | 1. | _____ |
| | | | | 2. | _____ |
| | | | | 3. | _____ |
| 3. | 3 is $\frac{1}{2}$ % of what number? | 4. | What is 60% of 11? | 4. | _____ |
| | | | | 5. | _____ |
| 5. | What number is 20% less than 90? | | | 6. | _____ |
| | | | | 7. | _____ |
| 6. | Tom's weekly pay was recently increased by 12%. His new weekly pay rate became \$89.60. What was his pay rate before the raise? | | | 8. | _____ |
| | | | | 9. | _____ |
| 7. | The ratio of boys to girls in a school is 9 to 11. If there are 400 students in the school, how many girls are in the school? | | | | |
| 8. | A consumer will be charged compound monthly interest at the rate of 1 percent per month on a loan of \$1000. If the consumer makes no payments on the loan for two months, to the nearest cent, how much will be owed by the consumer after the two months? | | | | |
| 9. | Name three irrational numbers between 20 and 21 | | | | |

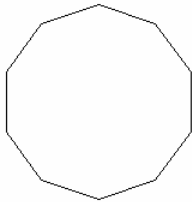
10. Consider the scale drawing of the right triangle shown below. Calculate the length of the hypotenuse if the lengths of the legs are 60 cm and 80 cm respectively. 10. _____



11. The figure below is made up of congruent parallelograms. What are the angle measures of the angles of the parallelogram? 11. _____



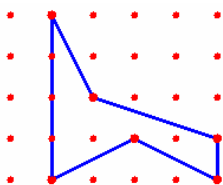
12. To the nearest degree, what is the angle measure of each interior angle of the regular polygon drawn below? 12. _____



13. To the nearest degree, what is the measure of each central angle in the polygon pictured in #12 above? 13. _____

14. Will the polygon pictured in #12 above tessellate the plane? (yes or no) 14. _____

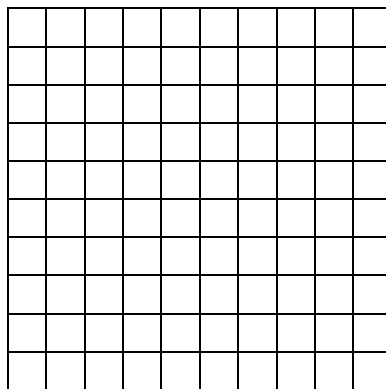
15. The horizontal and vertical distance between the dots in the array below is 1 cm. Find the area, in cm^2 of the polygon drawn on the array. 15. _____



Part II. Short Problems (5 points each).

16. Suppose you have previously developed the concept of a polygon. Design a creature card to introduce the concept of a convex polygon. (Just design the card; don't provide the child's expected responses.)

17. Show how to use the decimal square below and the visual method we used in class to determine what percent 41 is of 200. Label the diagram and explain your reasoning.



18. The eight pointed star below has a regular octagon at its center. To the nearest degree, what is the measure of each angle at the tips of the star? Explain and show how you obtain your answer.

