

Geometry Final Exam Review 2019

And Now From a New Angle Special Angles and Postulates

Vocabulary

Draw a figure to illustrate each term.

1. supplementary angles
2. complementary angles
3. adjacent angles

Define each term in your own words.

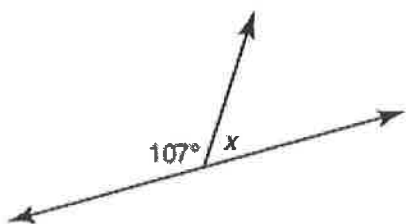
4. postulate
5. theorem

Provide a definition and example of each postulate:

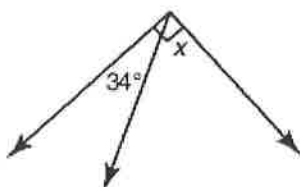
6. Linear Pair Postulate
7. Segment Addition Postulate
8. Angle Addition Postulate

Solve for x .

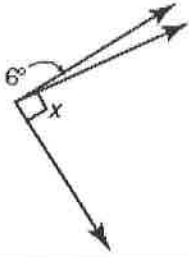
9.



10.



11.



Use the given information to determine the measures of the angles in each pair.

12. The measure of the supplement of an angle is twice the measure of the angle. What is the measure of each angle?
13. The measure of the complement of an angle is one fifth the measure of the angle. What is the measure of each angle?

Problem Set

Identify the property demonstrated in each example.

14. $m\angle ABC = m\angle XYZ$
 $m\angle ABC - m\angle RST = m\angle XYZ - m\angle RST$
15. $\overline{mQT} = \overline{mTU}$
 $\overline{mQT} + \overline{mWX} = \overline{mTU} + \overline{mWX}$
16. $\angle JKL \cong \angle JKL$
17. $GH = MN$ and $MN = OP$, so $GH = OP$
18. $\overline{mXY} = 4 \text{ cm}$ and $\overline{mBC} = 4 \text{ cm}$, so $\overline{mXY} = \overline{mBC}$
19. $\overline{PR} \cong \overline{PR}$
20. $GH = JK$
 $GH - RS = JK - RS$
21. $m\angle 1 = 134^\circ$ and $m\angle 2 = 134^\circ$, so $m\angle 1 = m\angle 2$
22. $m\angle ABC = m\angle DEF$
 $m\angle ABC + m\angle QRS = m\angle DEF + m\angle QRS$
23. $GH = GH$

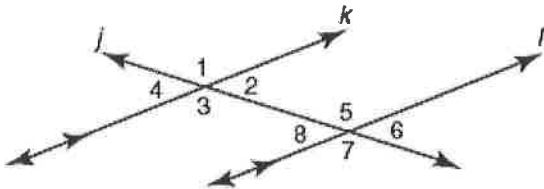
24. $ED = 3$ in. and $PQ = 3$ in., so $ED = PQ$

25. $\angle EFG \cong \angle LMN$ and $\angle LMN \cong \angle SPT$, so $\angle EFG \cong \angle SPT$

Problem Set

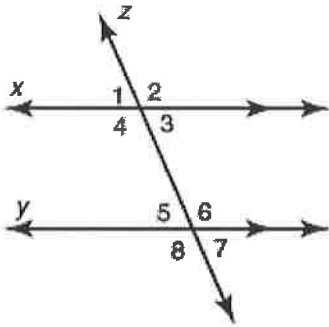
Write congruence statements for the pairs of corresponding angles in each figure.

26.

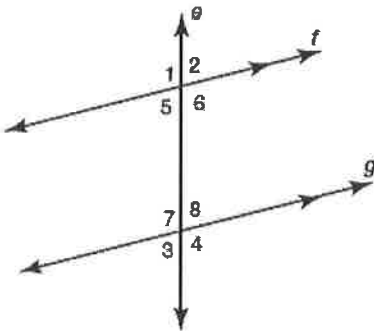


Make a conjecture to explain why each statement is true.

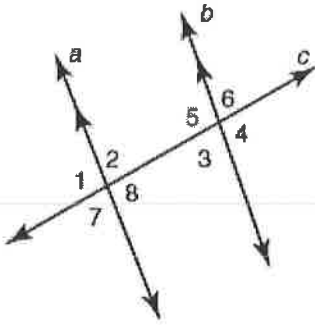
27. $m\angle 4 + m\angle 5 = 180^\circ$



28. $\angle 5 \cong \angle 8$

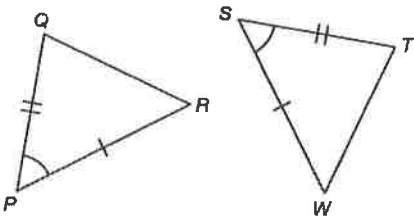


29. $\angle 6 \cong \angle 7$

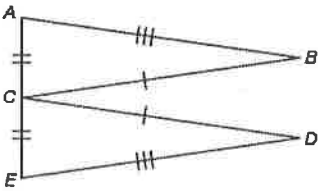


Determine which theorem can be used to prove that each statement is congruent:.

30. $\triangle PQR \stackrel{?}{\cong} \triangle STW$

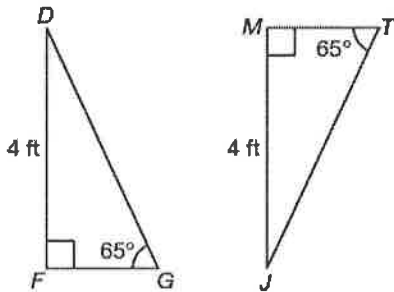


31. $\triangle ABC \stackrel{?}{\cong} \triangle EDC$

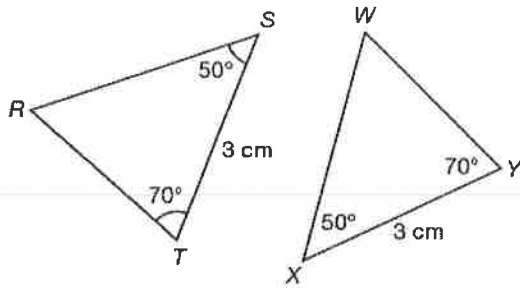


Determine which theorem can be used to prove that each statement is congruent:.

32. $\triangle DFG \stackrel{?}{\cong} \triangle JMT$

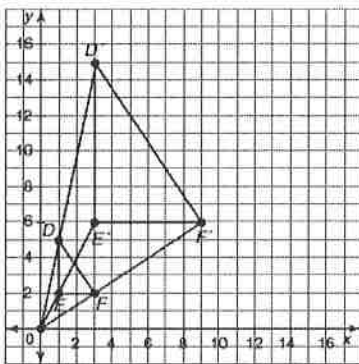


33. $\triangle RST \cong \triangle WXY$



Given the image and pre-image, determine the scale factor.

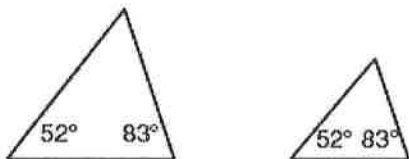
34.



Problem Set

Explain how you know that the triangles are similar.

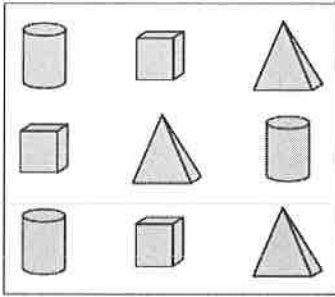
35.



Construct a probability model for each situation. Then state whether it is a uniform probability model or a non-uniform probability mode (36-37)l.

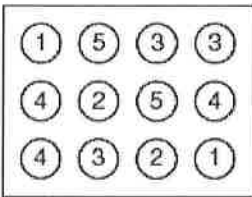
36. Janet has 3 pairs of blue socks, 2 pairs of white socks, 4 pairs of green socks, and 1 pair of brown socks. She chooses a pair of socks at random from a drawer.

37. A shape is chosen at random from the set.



Determine the probability of each event, $P(E)$, and its complement, $P(E^c)$.

38. You choose a ball at random from the box.



$$P(5) =$$

$$P(\text{not a } 5) =$$

It's in the Cards Compound Sample Spaces

Vocabulary

Write the term that best completes each statement.

39. Sets that do not have common elements are called _____.
40. Sets that do have common elements are called _____.
41. Events for which the occurrence of one event has no impact on the occurrence of the other event are _____.
42. Events for which the occurrence of one event has an impact on the following events are _____.

Use the Counting Principle to determine the number of possible outcomes for each situation. Show your calculations.

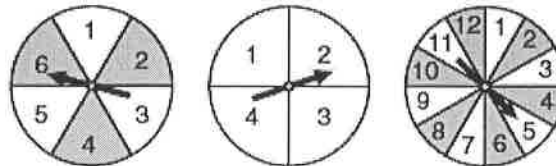
43. A restaurant offers a special price for customers who order a sandwich, soup, and a drink for lunch. The diagram shows the restaurant's menu. How many different lunches are possible?

| Lunch Menu | | |
|-------------------|----------------|---------------|
| <u>Sandwiches</u> | <u>Soup</u> | <u>Drinks</u> |
| Cheese | Minestrone | Cola |
| Chicken | Chicken Noodle | Tea |
| Ham and Egg | Vegetable | Coffee |
| Turkey Club | | |

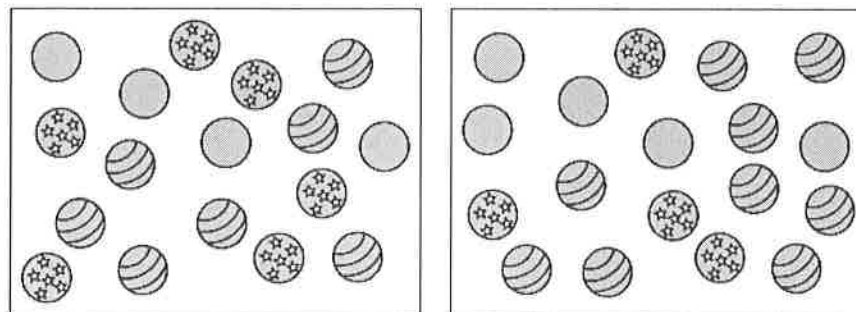
Problem Set

Determine the probability of each individual event. Then, determine the probability of each compound event. Show your calculations.

44. There are 24 students in a math class. Each day, the teacher randomly chooses 1 students to show a homework problem solution on the board. What is the probability that the same student will be chosen 5 days in a row?
45. You spin each spinner in the diagram one time. What is the probability that the first two spinners land on a 1?



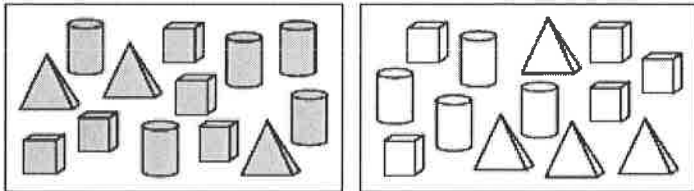
46. You randomly choose a marble from each set. What is the probability that both marbles with have stripes on it?



Problem Set

Use the Addition Rule for Probability to determine the probability that one or the other of the independent events described will occur.

47. You randomly choose a block from each set of shapes. What is the probability of choosing a pyramid from the shaded set or a cylinder from the unshaded set?



Determine the probability that each compound event will occur without replacement.

48. You randomly choose one ball from the bag without replacement, and then choose another ball. What is the probability that you will choose a white ball first or a shaded ball second?

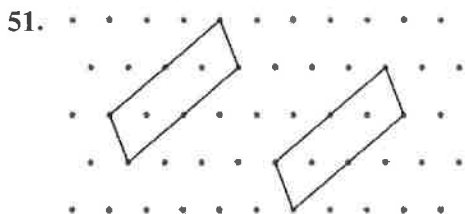


Calculate the number of possible outcomes in each of the following situations.

49. A computer code uses 4 randomly selected letters of the alphabet. If no letters are repeated, how many possible codes are there?
50. Twelve students are competing in the finals of a spelling bee. The top 3 finishers are awarded a gold, silver, and bronze medal. In how many ways can the medals be won?

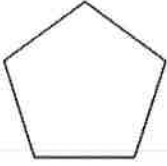
Problem Set

Connect the corresponding vertices of the figure and the translated figure. Name the shape that was translated and name the resulting solid figure.

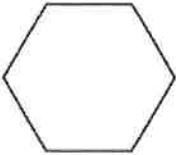


Name the solid formed by stacking similar shapes so that each layer of the stack is composed of a slightly smaller shape than the previous layer.

52.

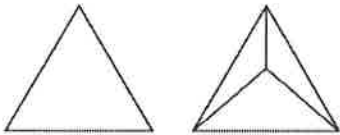


53.



Relate the dimensions of the given plane shape to the related solid figure. Tell whether the shape was made by stacking congruent or similar shapes.

54.

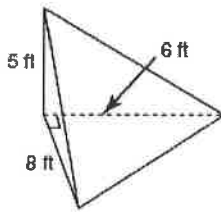


Turn Up the ...
Using Volume Formulas

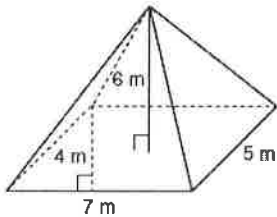
Problem Set

Calculate the volume of each pyramid.

55.

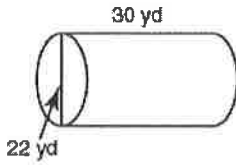


56.



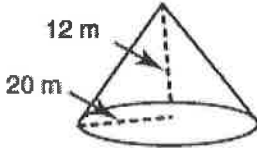
Calculate the volume of each cylinder. Use 3.14 for π . Round decimals to the nearest tenth, if necessary.

57.



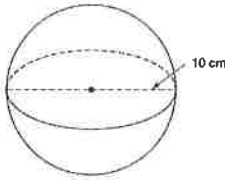
Calculate the volume of each cone. Use 3.14 for π . Round decimals to the nearest tenth, if necessary.

58.



Calculate the volume of each sphere. Use 3.14 for π . Round decimals to the nearest tenth, if necessary.

59.



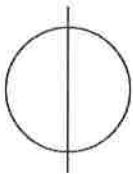
Calculate the number of possible outcomes in each of the following situations.

60. A committee of 4 students is to be formed from a homeroom of 25 students. How many different committees are possible?
61. A pizzeria offers 8 different toppings on their pizzas. If a customer wants to order a 3-topping pizza, how many possible options are there?

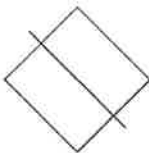
Problem Set

Write the name of the solid figure that would result from rotating the plane figure shown around the axis shown.

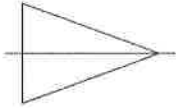
62.



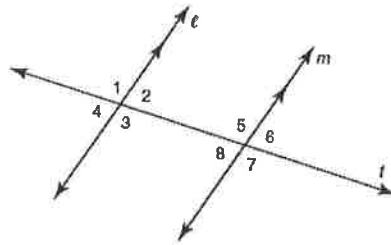
63.



64.



65. Read and fill in the missing parts of the proof..

Given: $\ell \parallel m$ Prove: $\angle 1$ and $\angle 6$ are supplementary.

| Statements | Reasons |
|---|---------------------------------------|
| 1. $\ell \parallel m$ | 1. Given |
| 2. $\angle 1 \cong \angle 5$ | 2. _____ |
| 3. $m\angle 1 = m\angle 5$ | 3. Definition of congruent angles |
| 4. $\angle 1$ and $\angle 2$ are a linear pair. | 4. Definition of a linear pair |
| 5. $\angle 1$ and $\angle 2$ are supplementary. | 5. Linear Pair Postulate |
| 6. $m\angle 1 + m\angle 2 = 180^\circ$ | 6. Definition of supplementary angles |
| 7. $m\angle 5 + m\angle 2 = 180^\circ$ | 7. _____ |
| 8. $\angle 2$ and $\angle 5$ are supplementary. | 8. Definition of supplementary angles |