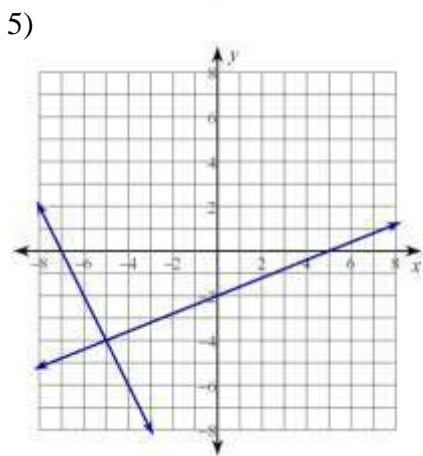
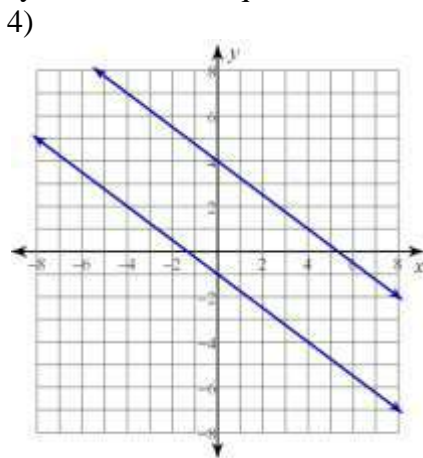


Math 8 Semester 2 Final Review

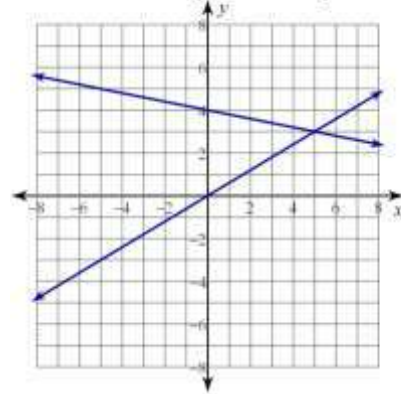
Systems of Linear Equations

- 1) What is the solution to the system of equations:
 $4x + 2y = 54$ and $y = x + 3$?
- 2) Two friends are saving up for the Eighth-Grade Trip to Knott's Berry Farm. Bob originally has \$14 and will save \$6 every week. Jane originally has \$10 and will save \$8 every week. After how many weeks will the two friends have saved up the same amount of money?
- 3) A box contains \$5 bills and \$10 bills. If there were 100 bills in the box and the total value of the bills was \$840, how many \$5 bills were in the box?

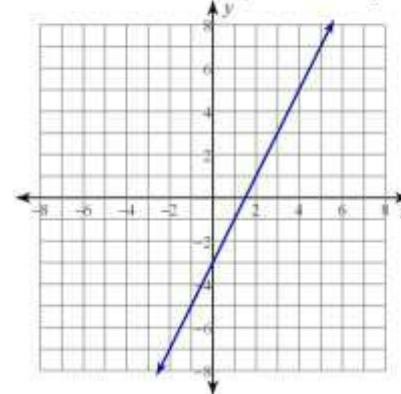
For questions 4 and 5, what is the solution to each system of linear equations?



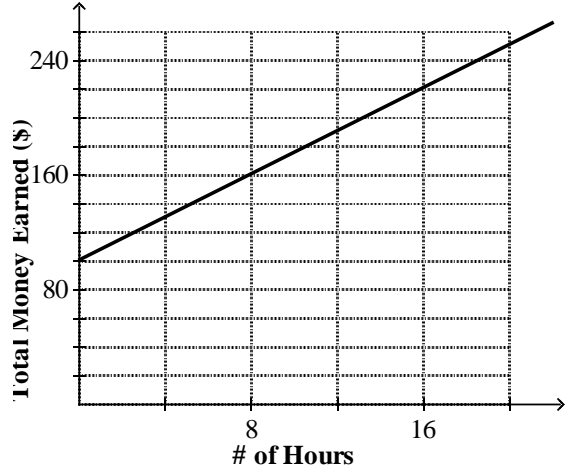
- 6) The system of equations $x + 5y = 20$ and $3x - 5y = 0$ is graphed below. What is the solution to the system of equations?



- 7) The system of equations $2x - y = 3$ and $-6x + 3y = -9$ is graphed below. What is the solution to the system of equations?



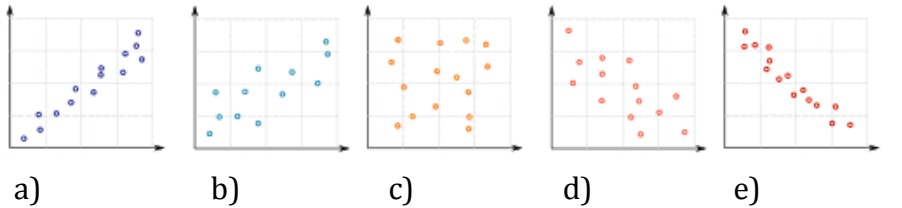
- 8) The graph below shows the amount of money Jane earns. How much money does she make per hour?



Math 8 Semester 2 Final Review

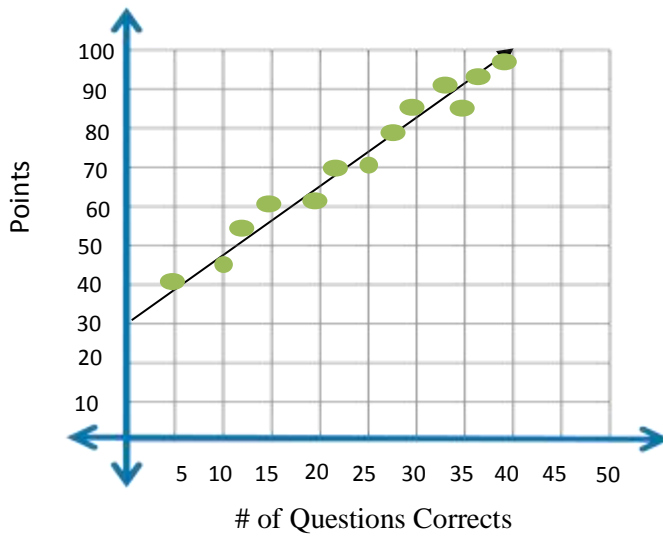
Scatter Plots

9) State which type of correlation each of the following graphs has. Explain your reasoning.

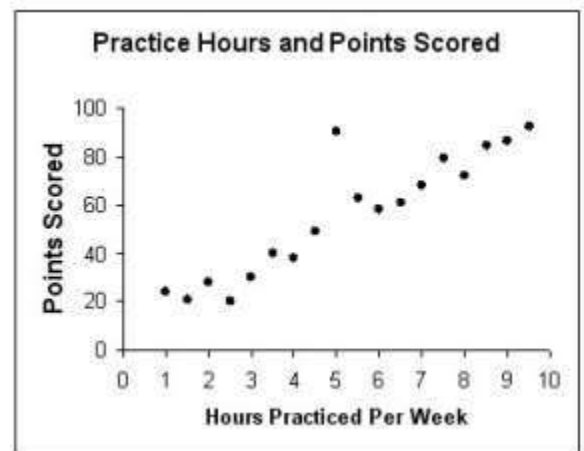


10) What is the equation of the line of best fit?

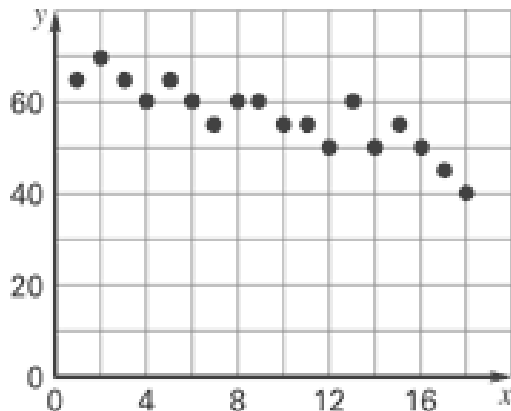
Student Scores



12) The points scored for a basketball team varies depending on the amount of hours spent practicing per week. Which of the following conclusions about the points scored and hours practiced is **best** supported by the scatterplot below?



11) Write a linear equation that approximates the best fit to the data.



- The team needs to practice 5 hours a week.
- The team will score the most points if they practice 9.5 hours every week.
- When the team practiced more hours per week, they scored more points overall.
- There appears to be no relationship between the number of hours the team practices and the points they score.

Math 8 Semester 2 Final Review

Transformations & Coordinate Planes

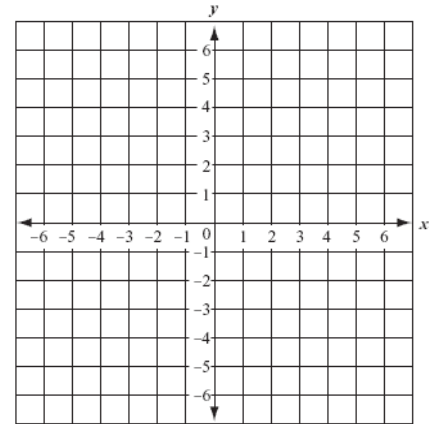
Use the following to answer questions 13 – 15.

On a coordinate plane, line segment \overline{AB} begins at point $A(3, 4)$ and $B(-3, 2)$. The segment is translated by $\langle x + 1, y - 5 \rangle$ and then reflected across the x -axis to form segment $\overline{A''B''}$.

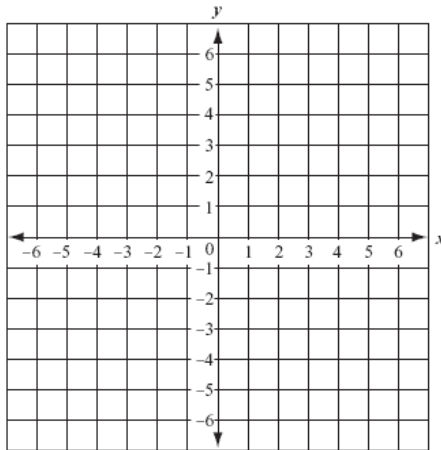
13) What are the coordinates for A' after translation, but **BEFORE** the reflection?

14) What are the coordinates for B'' ?

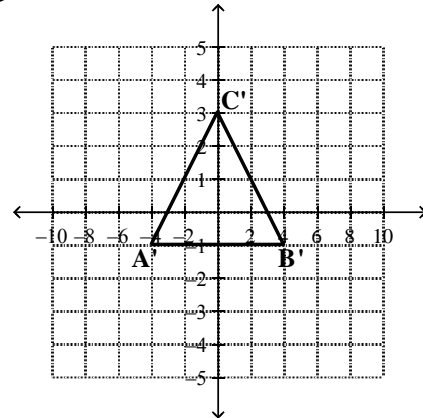
15) Which transformation changes the size of the shape?



16) When you rotate $A(3, 2)$ clockwise 90° about the origin, what are the coordinates for A' ?



18) Triangle $A'B'C'$ was created by translating a triangle 2 units down and 3 units to the left. What were the coordinates of the original triangle ABC ?



17) Suppose two angles in a coordinate plane, one measuring 80° and the other measuring 160° , were both rotated 180° about the origin and then translated 40 units down. Which of these would be a measure of one of the resulting angles?

- a) 40°
- b) 80°
- c) 120°
- d) 260°

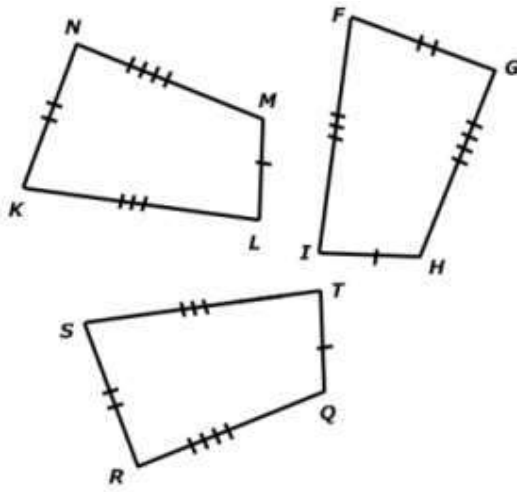
19) Which of these statements are correct about an angle measuring 78° in a coordinate plane? Select *three* that apply.

- a) If it is reflected across the line $y = x$, it will still measure 78° .
- b) If it is translated 22 units down, it will no longer measure 78° .
- c) If it is rotated 180° about the origin, it will no longer measure 78° .
- d) If it is reflected across the y -axis, it will no longer measure 78° .
- e) If it is translated 26 units to the left, will still measure 78° .
- f) If it is rotated 90° about the origin, will still measure 78° .

Math 8 Semester 2 Final Review

Transformations & Coordinate Planes, cont.

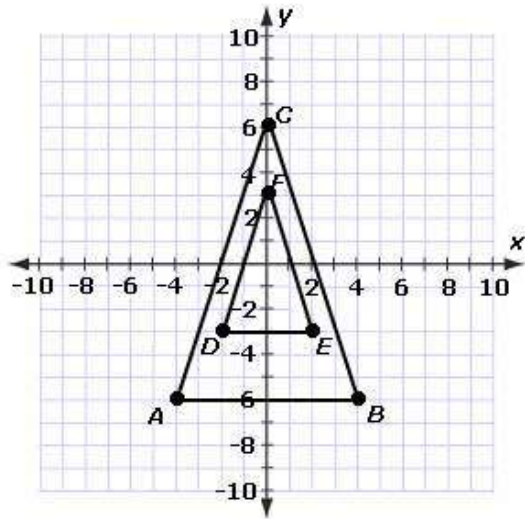
20) In the figure below, quadrilateral $FGHI$ is congruent to quadrilateral $KNML$ and quadrilateral $SRQT$.



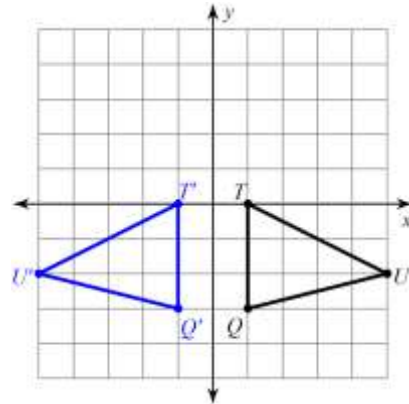
Which pair of angles *must* be congruent?

- a) $\angle T$ and $\angle M$
- b) $\angle K$ and $\angle Q$
- c) $\angle N$ and $\angle S$
- d) $\angle M$ and $\angle Q$

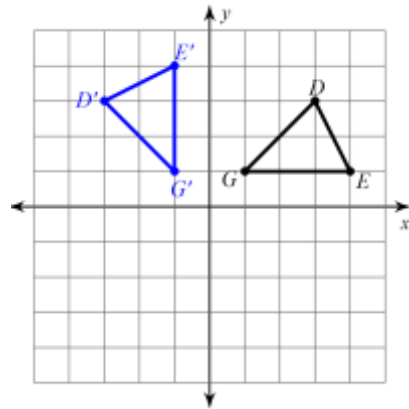
21) Describe a transformation that can show that these triangles are similar.



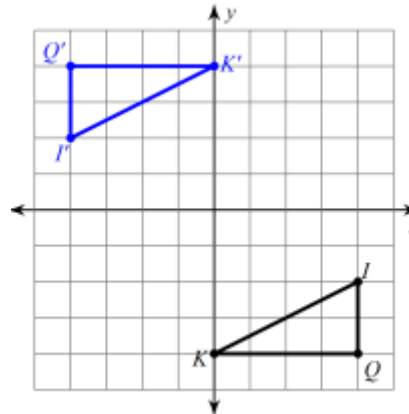
For questions #25 - 27, describe a transformation on the preimage that will produce its image.



23)

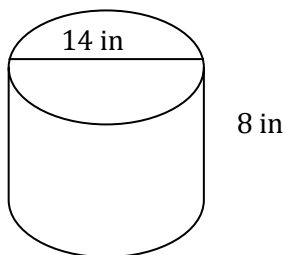


24)



Volume

25) How much Kool-Aid can fit in the container?

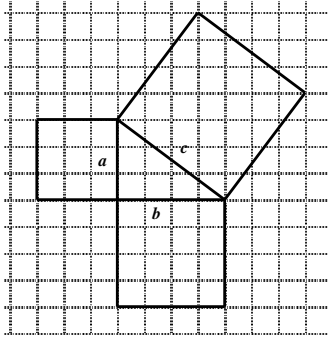


26) What are the steps for finding the volume of a cone?

Math 8 Semester 2 Final Review

Pythagorean Theorem & Distances

27) Explain how this picture proves the Pythagorean Theorem.

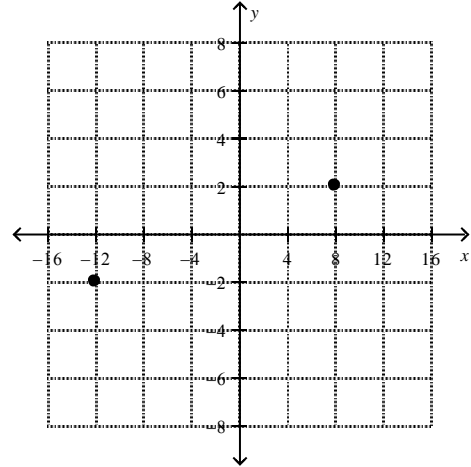


28) A ladder is 8 ft long. To the nearest foot, how far up a building's wall will the ladder reach if the base of the ladder is placed 5 feet from the wall?

29) A right triangle has a hypotenuse of 15 ft. and a leg length of 12 ft. What is the length of the missing leg?

30) A rectangle is 5 inches long and 3 inches wide. What is the length of its diagonal?

31) What is the distance between the two points plotted below?



Transversals & Angle Relationships

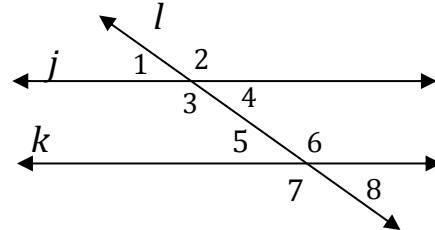
Use the figure below to answer questions 32 & 33.

This figure is not drawn to scale. Lines m and n are parallel.

If $m\angle 1 = 42^\circ$,

32) What is the measure of angle 4?

33) What is the measure of angle 7?



34) Which of the following always are congruent?

- Vertical angles
- Alternate interior angles
- Same-side interior angles
- Alternate exterior angles
- Same-side exterior angles
- Corresponding angles
- Supplementary angles
- Complementary angles
- Adjacent angles

35) Which of these statements is true about the sum of the measures of the interior angles of a triangle?

- a) It equals 90° , because it's possible to arrange three copies of the same triangle so that the sum of its three angles forms a right angle.
- b) It equals 180° , because it's possible to arrange three copies of the same triangle so that the sum of its three angles forms a right angle.
- c) It equals 90° , because it's possible to arrange three copies of the same triangle so that the sum of its three angles forms a line.
- d) It equals 180° , because it's possible to arrange three copies of the same triangle so that the sum of its three angles forms a line.