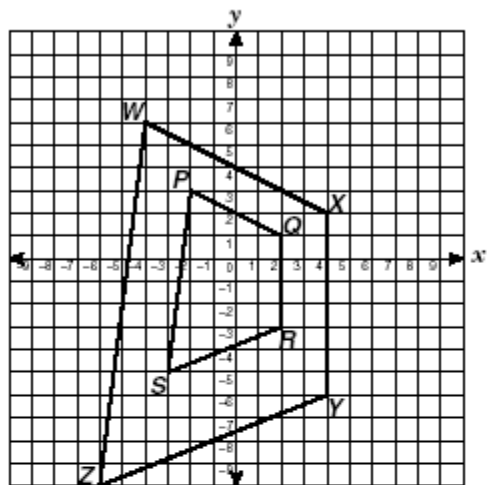


HIGH SCHOOL Math TEKS FOCUS Objective Six

8.6(A)

Generate similar shapes using dilations, including enlargements and reductions

- 31 Quadrilateral $PQRS$ was dilated to form quadrilateral $WXYZ$.

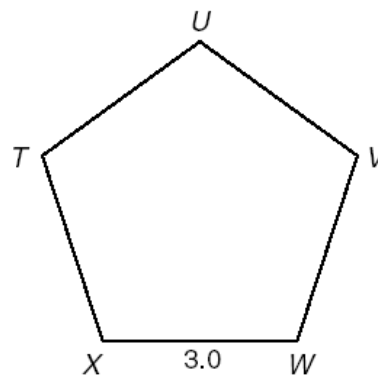


Which number best represents the scale factor used to change quadrilateral $PQRS$ into quadrilateral $WXYZ$?

- A $\frac{1}{4}$
- B $\frac{1}{2}$
- C 2
- D 4

8.6A 8th Grade 2003

- 15 Regular pentagon $MNPQR$ is similar to pentagon $TUVWX$.



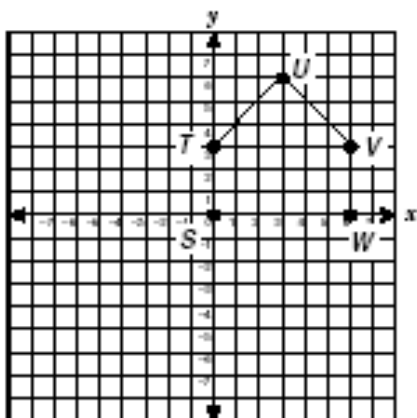
What scale factor was used to dilate regular pentagon $MNPQR$ to pentagon $TUVWX$?

- A 0.4
- B 1.8
- C 2.5
- D 4.2

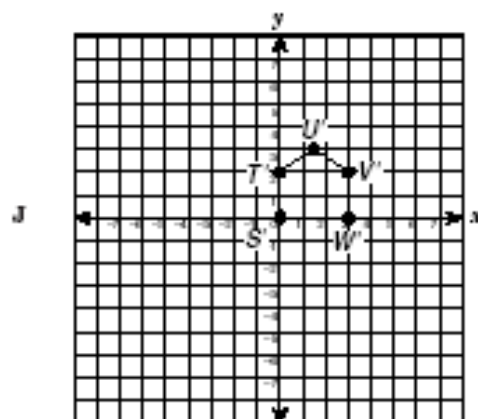
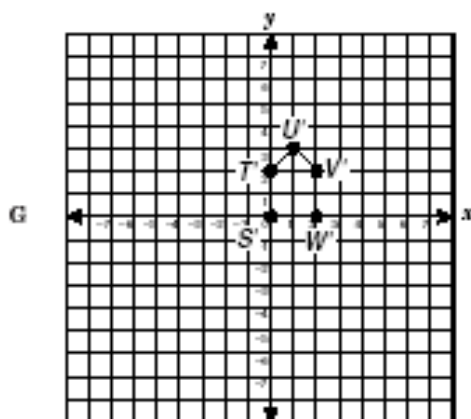
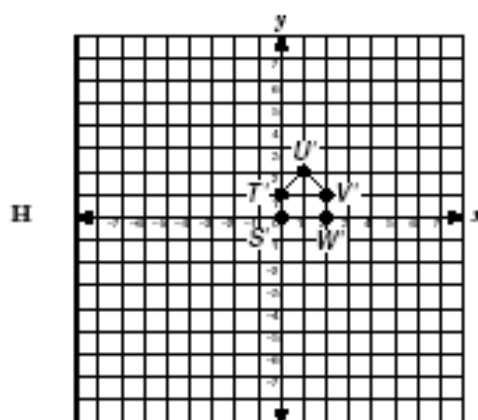
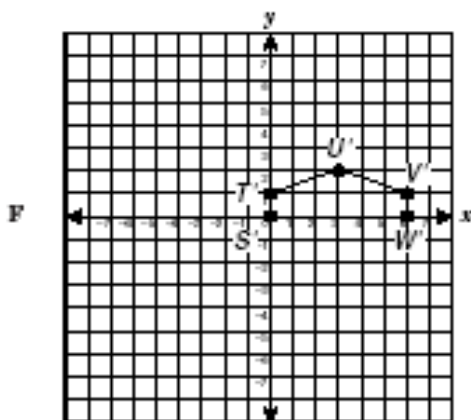
8.6A 8th Grade 2004

HIGH SCHOOL MATH TEKS FOCUS Objective Six

32 The pentagon in the graph below is to be dilated by a scale factor of $\frac{1}{3}$.



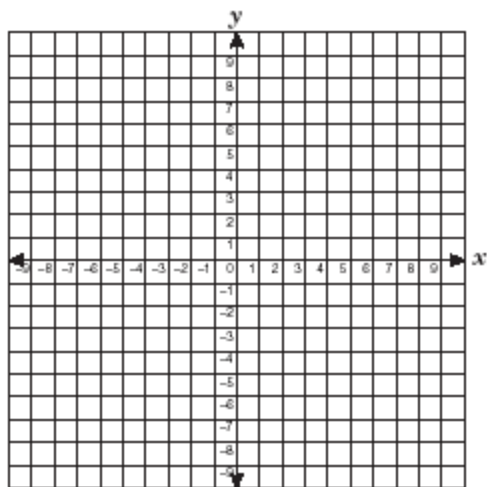
Which graph shows this transformation?



9th Grade 2003

HIGH SCHOOL Math TEKS Focus Objective Six

- 18 $\triangle DFG$ has vertices $D(2, 4)$, $F(4, 8)$, and $G(6, 4)$.



$\triangle DFG$ is dilated by a scale factor of $\frac{1}{4}$ and has the origin as the center of dilation. What are the coordinates of F' ?

F (1, 2)

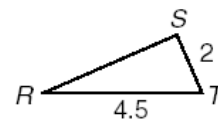
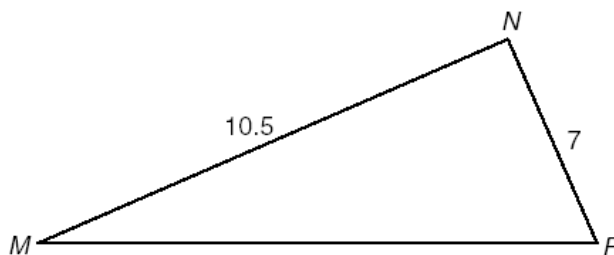
G $(\frac{1}{2}, 1)$

H (16, 32)

J $(\frac{3}{2}, 1)$

9th Grade 2004

- 31 $\triangle MNP \sim \triangle RST$ is shown below.



Which scale factor was used to transform $\triangle MNP$ to $\triangle RST$?

A $\frac{1}{3}$

B $\frac{1}{2}$

C $\frac{2}{7}$

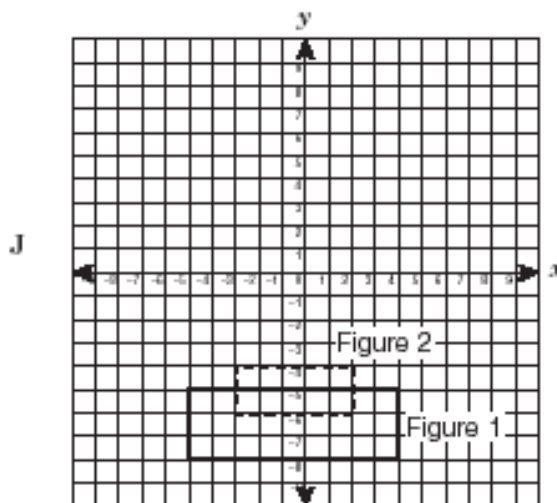
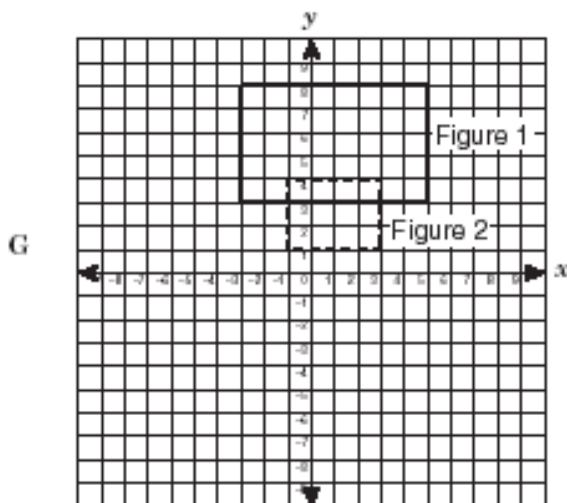
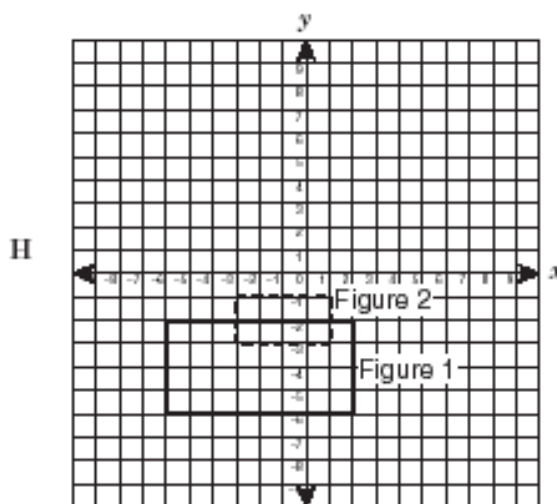
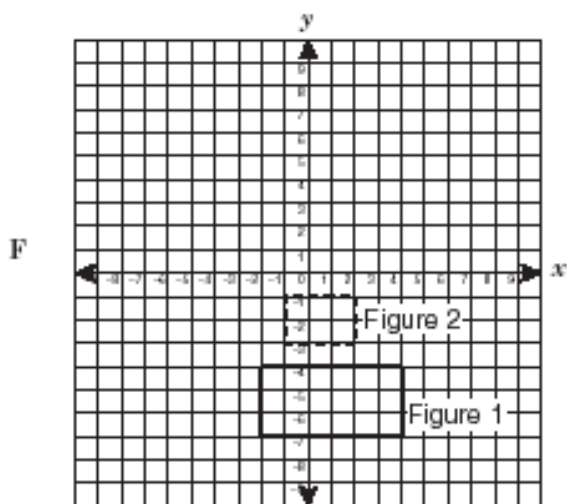
D 5

9th Grade 2004

HIGH SCHOOL MATH TEKS FOCUS

Objective Six

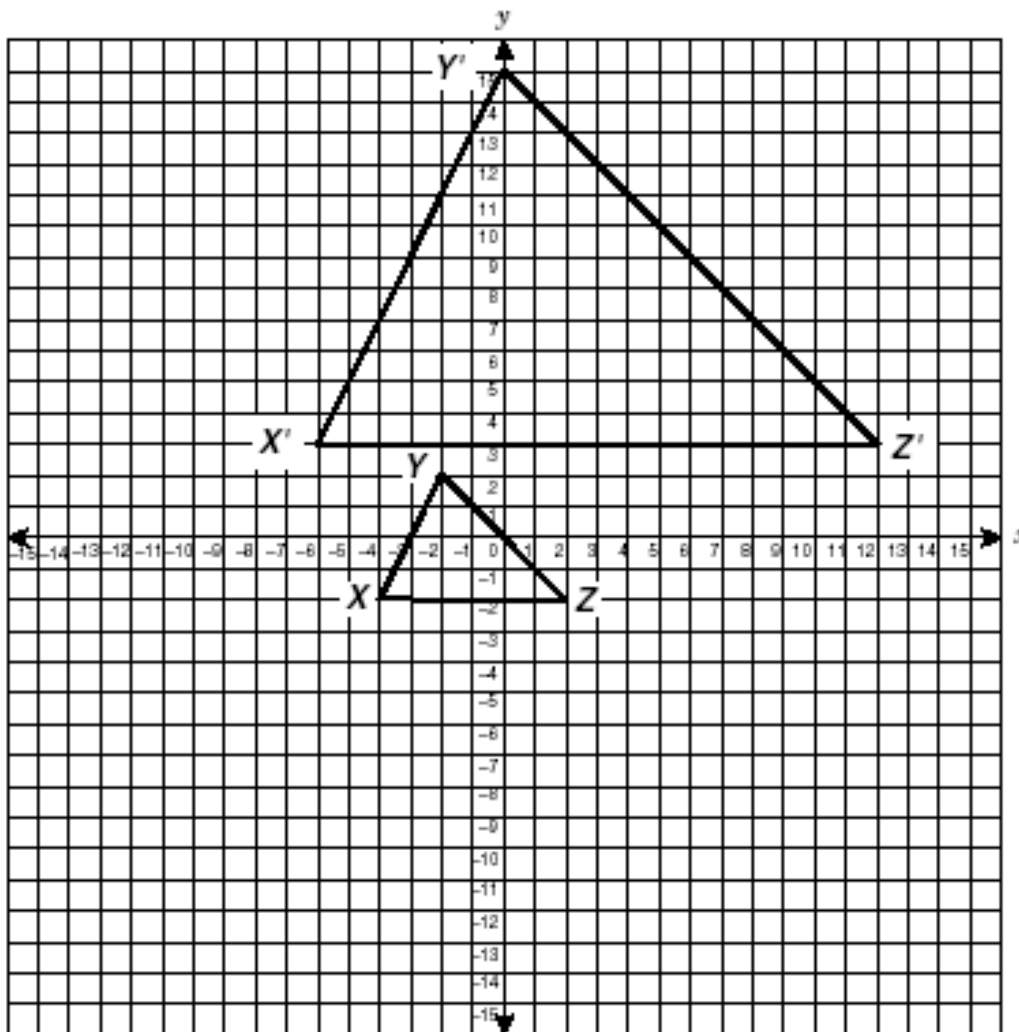
- 40 Identify the drawing that shows Figure 1 under dilation to produce Figure 2, using center of dilation (0, 0) and a scale factor of $\frac{1}{2}$.



10th Grade 2003

High School Math TEKS Focus
Objective Six

44 The graph below shows $\triangle XYZ$ and similar $\triangle X'Y'Z'$.



Which statement is true when transforming $\triangle XYZ$ to $\triangle X'Y'Z'$?

F All the corresponding angles will increase by a multiple of 3.

G All the corresponding angles will increase by a scale factor of $\frac{1}{3}$.

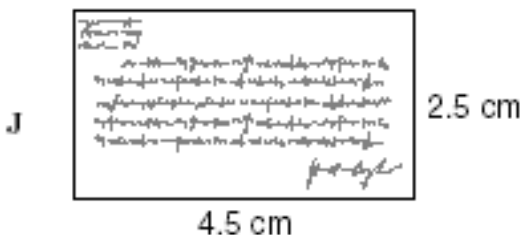
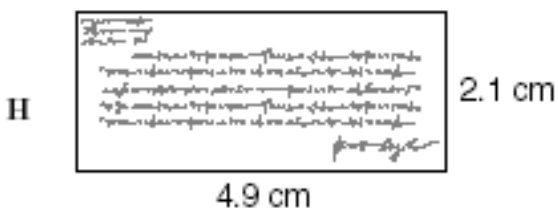
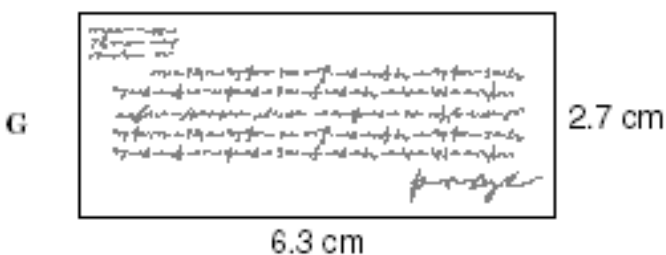
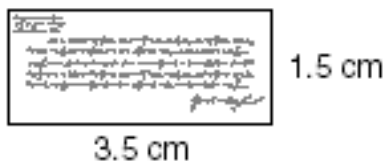
H All the corresponding sides are proportional, with a scale factor of 3.

J All the corresponding sides are proportional, with a scale factor of $\frac{1}{3}$.

10th Grade 2003

HIGH SCHOOL MATH TEKS FOCUS Objective SIX

- 16 A copy machine can enlarge or reduce letters proportionately. Which would not be an enlargement or reduction of the letter below?



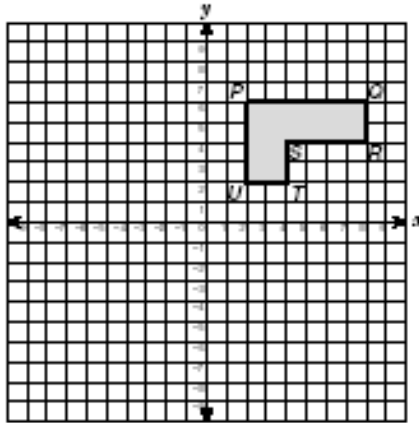
10th Grade 2004

HIGH SCHOOL Math TEKS FOCUS Objective Six

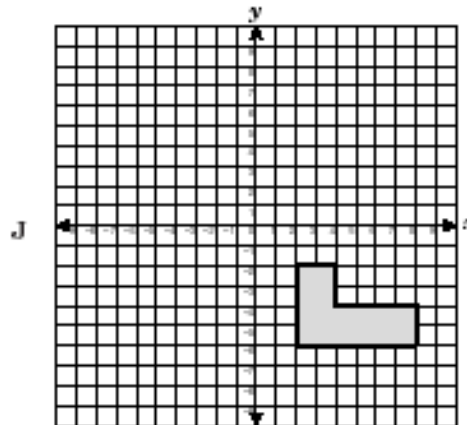
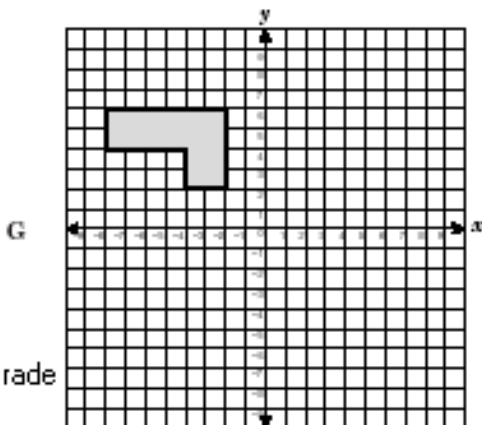
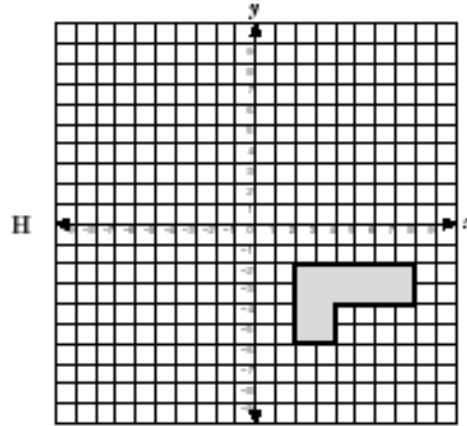
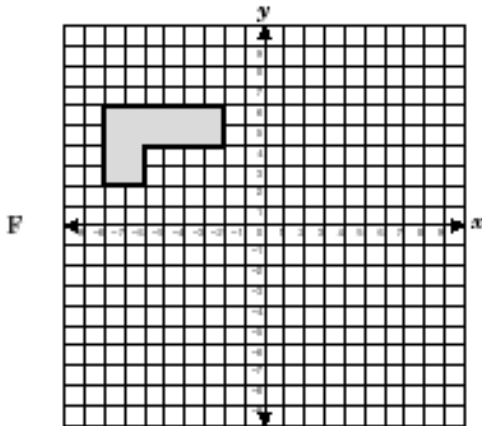
8.6(B)

Graph dilations, reflections, and translations on a coordinate plane

10 Polygon $PQRSTU$ is shown on the coordinate grid below.



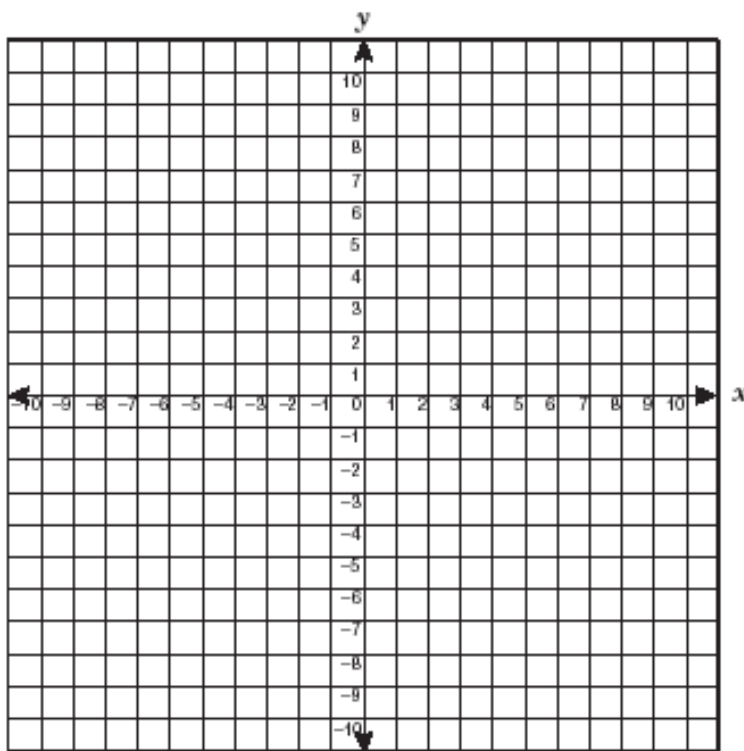
Which coordinate grid shows the reflection of polygon $PQRSTU$ across the x -axis?



8th Grade
2003

HIGH SCHOOL Math TEKS FOCUS
Objective SIX

- 43** A circle with a radius of 3 units has its center at $(-4, -2)$ on a coordinate grid.



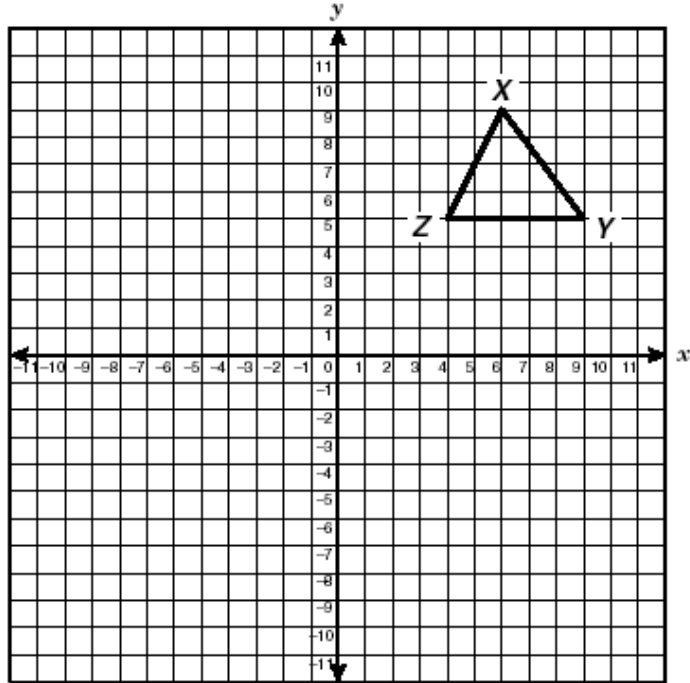
If the circle is translated 6 units to the right and 3 units up, what will be the coordinates of the new center?

- A** $(2, 1)$
- B** $(1, 2)$
- C** $(-2, 1)$
- D** $(1, -2)$

8.6B 8th Grade 2003

High School Math TEKS Focus
Objective Six

27 If $\triangle XYZ$ is translated 8 units to the left and 3 units down, what are the coordinates of point Y' ?



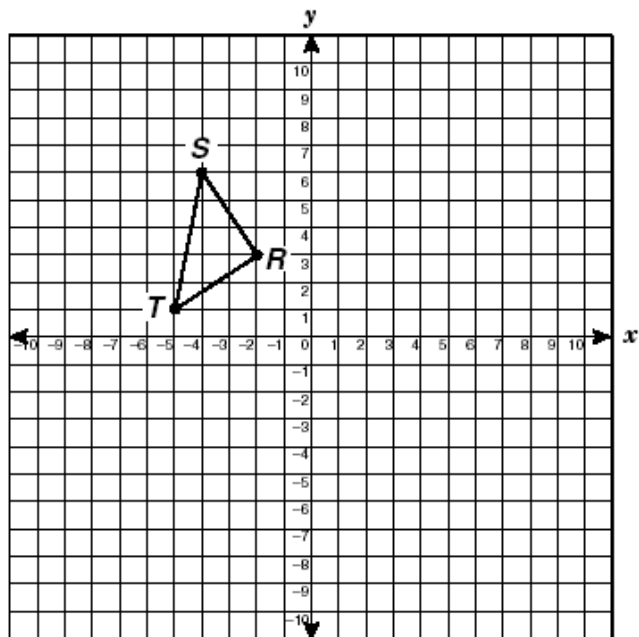
- A (9, 5)
- B (-2, 6)
- C (1, 2)
- D (-4, 2)

8.6B 8th Grade 2004

HIGH SCHOOL Math TEKS FOCUS

Objective Six

47 $\triangle RST$ is shown on the coordinate plane below.

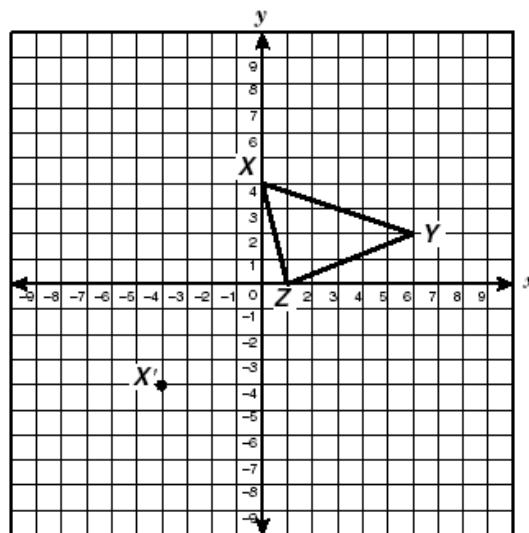


Find the coordinates of the vertices of the image of $\triangle RST$ reflected across the y-axis.

- A $(-2, -3), (-4, -6), (-5, -1)$
- B $(2, 3), (4, 6), (5, 1)$
- C $(0, 3), (-2, 6), (-3, 1)$
- D $(2, -3), (4, -6), (5, -1)$

9th Grade 2003

6 Triangle XYZ is translated so that X is mapped to X' .



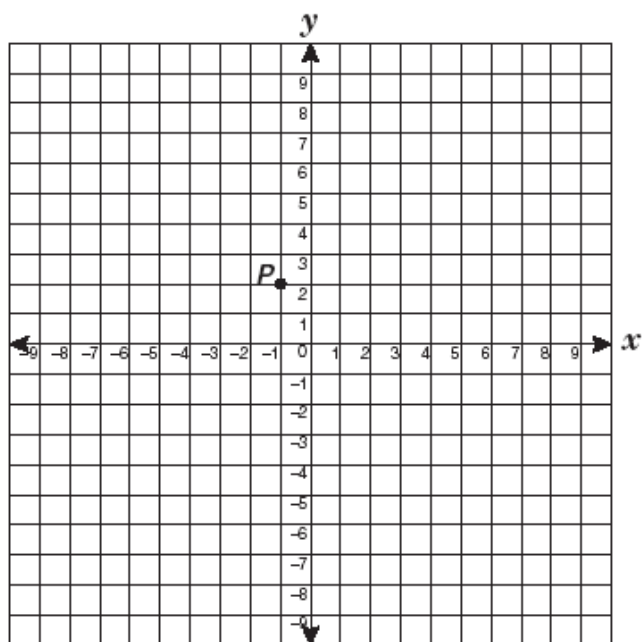
Which coordinate pair best represents Y' ?

- F $(-3, -8)$
- G $(2, -7)$
- H $(2, -6)$
- J $(2, -2)$

9th Grade 2004

HIGH SCHOOL Math TEKS Focus Objective Six

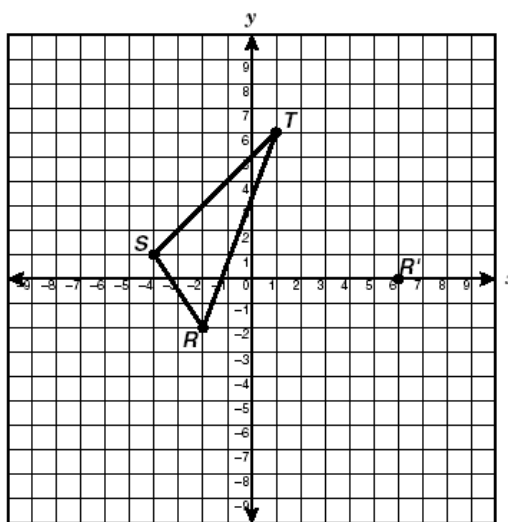
- 17 Identify the location of point P under translation $(x + 3, y - 2)$.



- A $(3, -2)$
- B $(2, 3)$
- C $(-1, 0)$
- D $(2, 0)$

10th Grade 2003

- 54 $\triangle RST$ is translated so that R is mapped to R' .



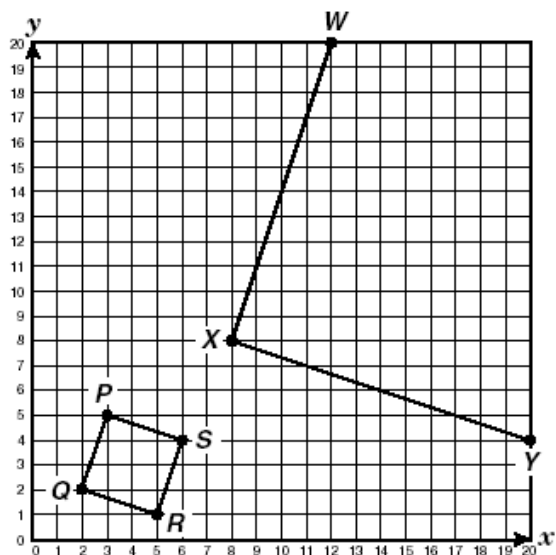
Which set of ordered pairs best identifies points S' and T' ?

- F $S'(8, 3), T'(3, 8)$
- G $S'(4, 3), T'(9, 8)$
- H $S'(10, -1), T'(12, -9)$
- J $S'(10, 3), T'(5, 4)$

10th Grade 2003

HIGH SCHOOL Math TEKS FOCUS Objective Six

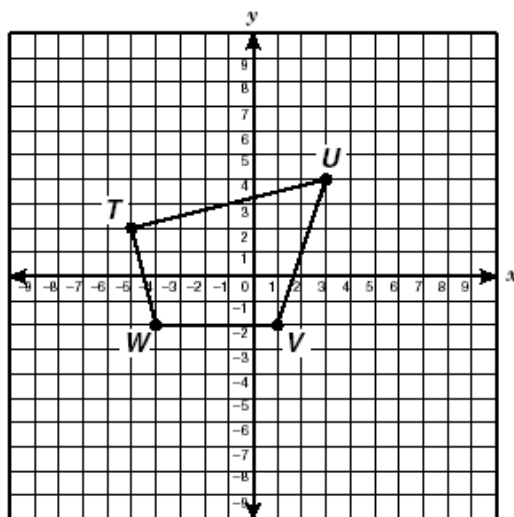
- 10 At what coordinates should vertex Z be placed to create a quadrilateral $WXYZ$ that is similar to quadrilateral $PQRS$?



- F (24, 16)
- G (24, 24)
- H (20, 20)
- J (16, 24)

10th Grade 2004

- 28 If quadrilateral $TUVW$ is reflected across the x -axis to become quadrilateral $T'U'V'W'$, what will be the coordinates of W' ?



- F (-4, -2)
- G (-4, 2)
- H (2, -4)
- J (4, -2)

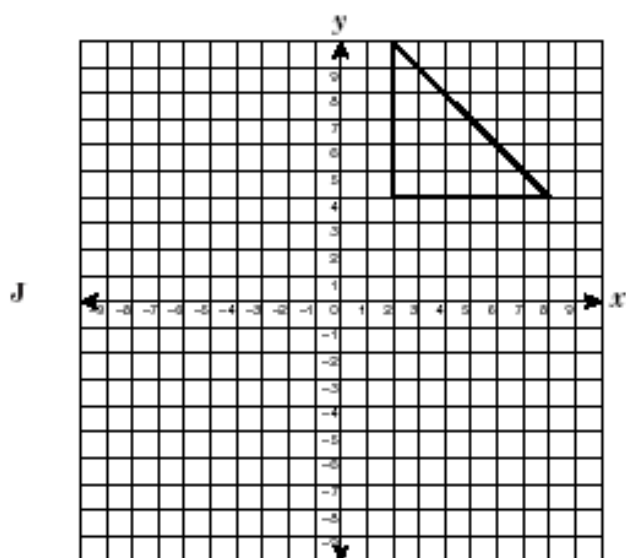
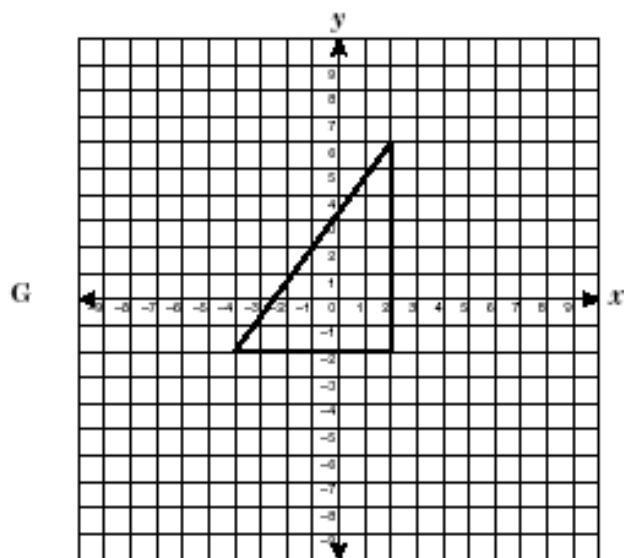
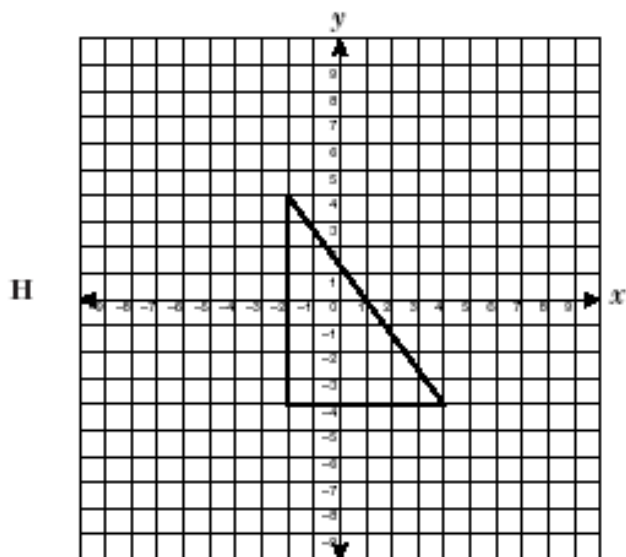
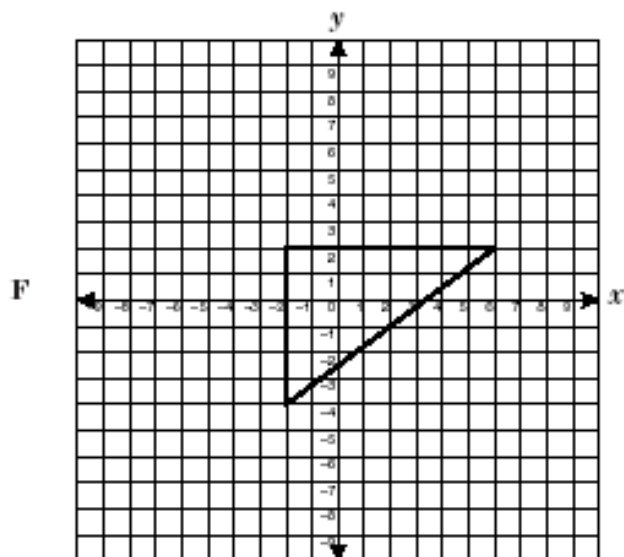
10th Grade 2004

High School Math TEKS Focus
Objective Six

8.7(D)

Locate and name points on a coordinate plane using ordered pairs of rational numbers

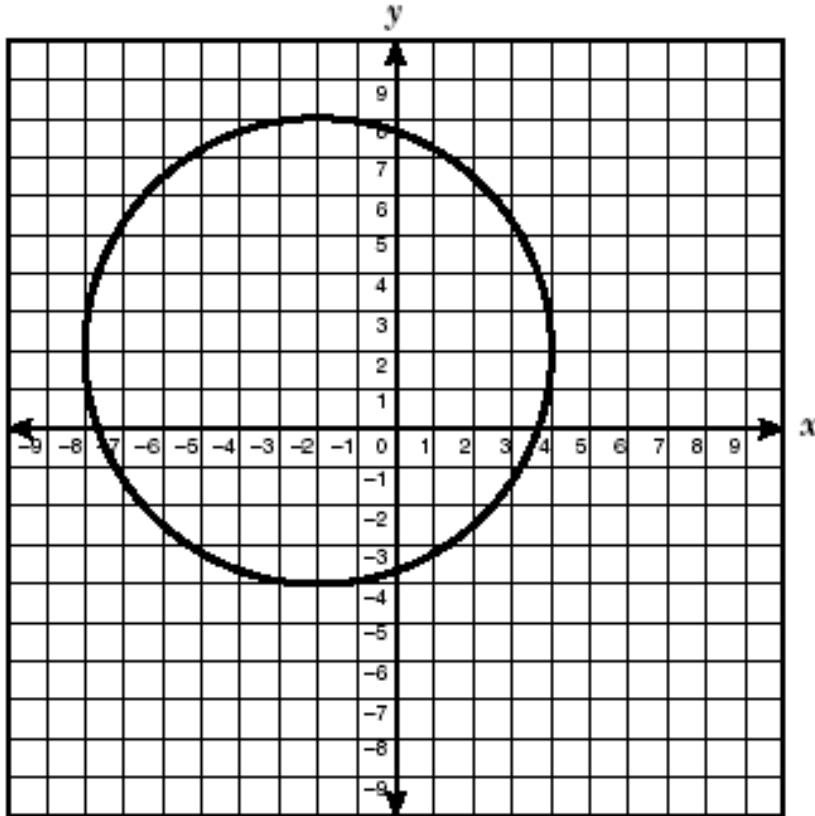
- 34 Which graph shows a right triangle with one vertex at coordinates $(-2, -4)$ and another vertex in the first quadrant?



8.7D 8th Grade 2003

High School Math TEKS Focus
Objective Six

- 2 A circle with a radius of 6 units is shown below.



What are the coordinates of the center of the circle?

F $(-1, 2)$

G $(-2, 3)$

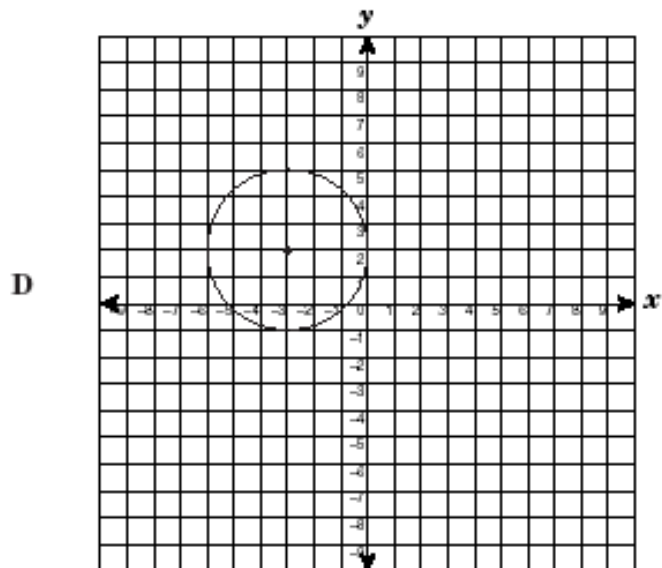
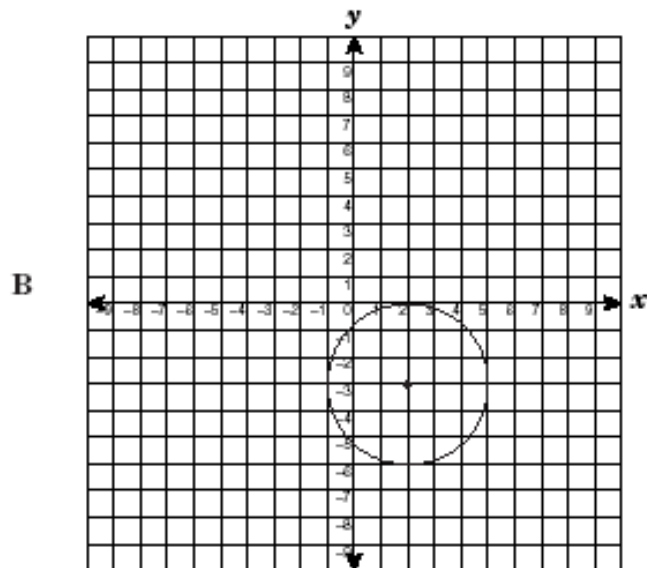
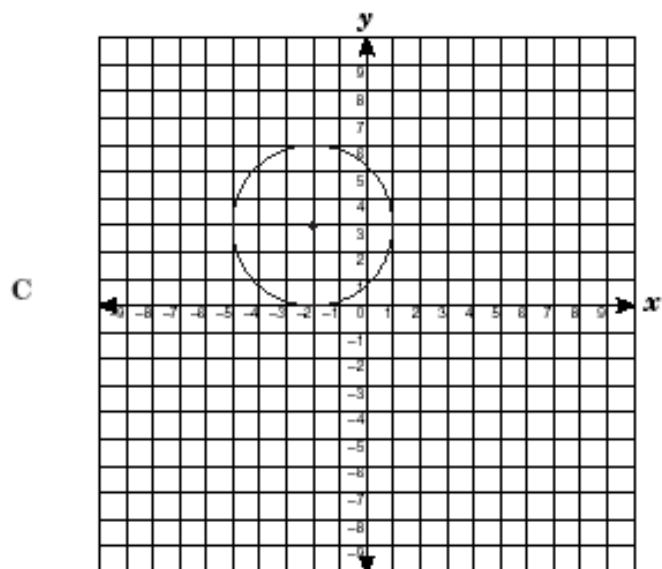
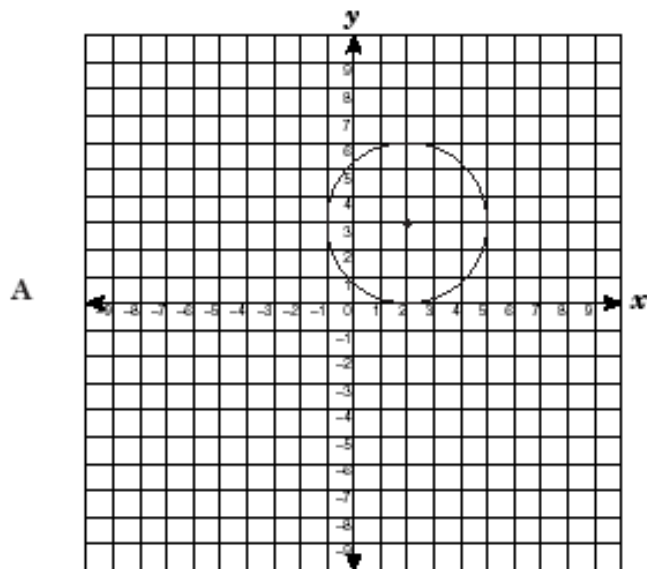
H $(-2, 2)$

J $(-3, 2)$

8.7D 8th Grade 2004

High School Math TEKS Focus
Objective Six

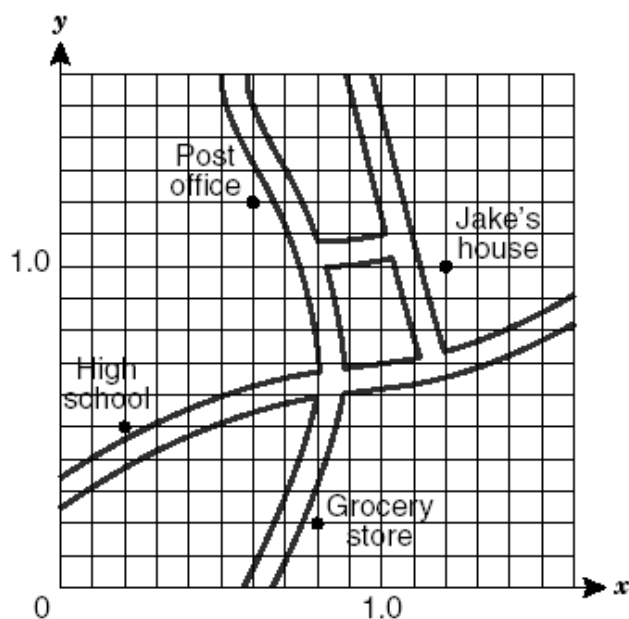
3 Which circle has a center located at coordinates $(-3, 2)$?



9th Grade 2003

HIGH SCHOOL Math TEKS FOCUS Objective Six

- 43 Jake made a map of his neighborhood for a school project. He placed a grid over the map.

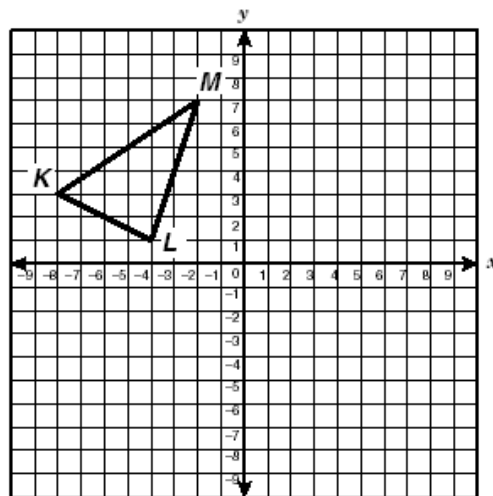


Which coordinate point best represents the post office?

- A (6, 12)
- B (12, 6)
- C (1.2, 0.6)
- D (0.6, 1.2)

9th Grade 2003

- 52 $\triangle KLM$ has coordinates $K(-8, 3)$, $L(-4, 1)$, and $M(-2, 7)$. What will be the new coordinates of point M if the triangle is translated 4 units to the right and 3 units down?

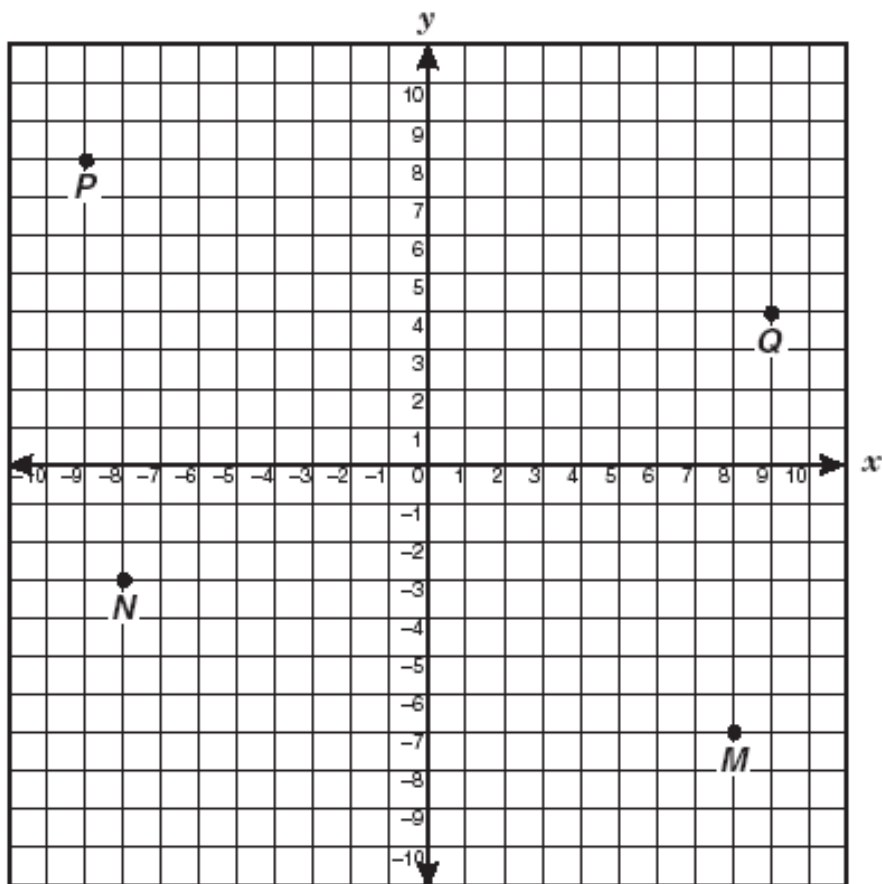


- F (0, -2)
- G (2, 4)
- H (-4, 0)
- J (-6, 4)

9th Grade 2004

High School Math TEKS Focus
Objective Six

51 For which point is $x < -\frac{15}{2}$ and $y < -\frac{3}{2}$?



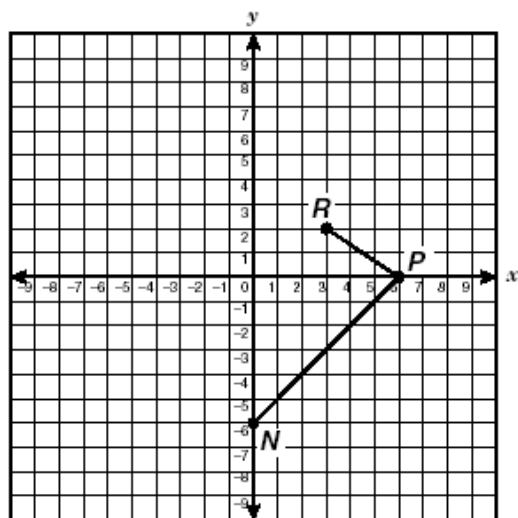
- A M
- B N
- C P
- D Q

10th Grade 2003

HIGH SCHOOL Math TEKS FOCUS

Objective SIX

- 37 A portion of isosceles trapezoid $NPRT$ is shown on the grid below.

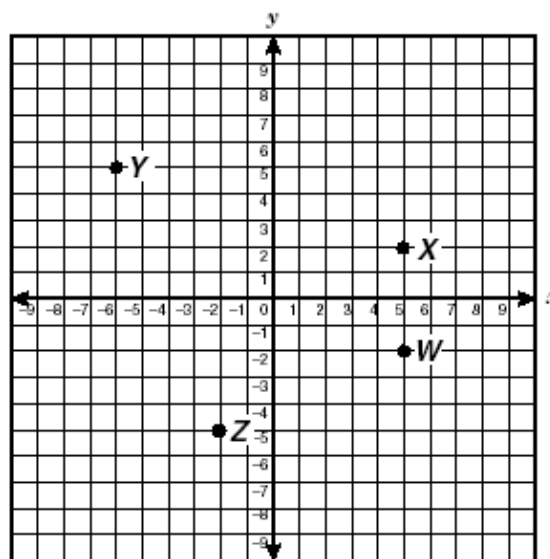


At what coordinates should vertex T be placed to make \overline{NP} parallel to \overline{RT} in order to complete isosceles trapezoid $NPRT$?

- A $(-2, -2)$
- B $(-3, -2)$
- C $(-2, -3)$
- D $(-4, -5)$

10th Grade 2004

- 48 Which point on the grid satisfies the conditions $x \geq 5$ and $y < -1$?



- F W
- G X
- H Y
- J Z

10th Grade 2004

HIGH SCHOOL Math TEKS FOCUS
Objective Six

Geometry (b4A)

Select an appropriate representation (concrete, pictorial, graphical, verbal, or symbolic) in order to solve problems

- 24** If $\angle A$ and $\angle B$ are complementary angles and $m\angle A$ is x , which equation can be used to find y , $m\angle B$?

F $y = 90 + x$

G $y = 90 - x$

H $y = 180 - x$

J $y = x + 180$

11th Grade 2003

- 7** Doris had a circular garden with a radius of 30 feet. She used all of the fencing from the circular garden to enclose a square garden. The length of each side of Doris's square garden was approximately —

A 47 feet

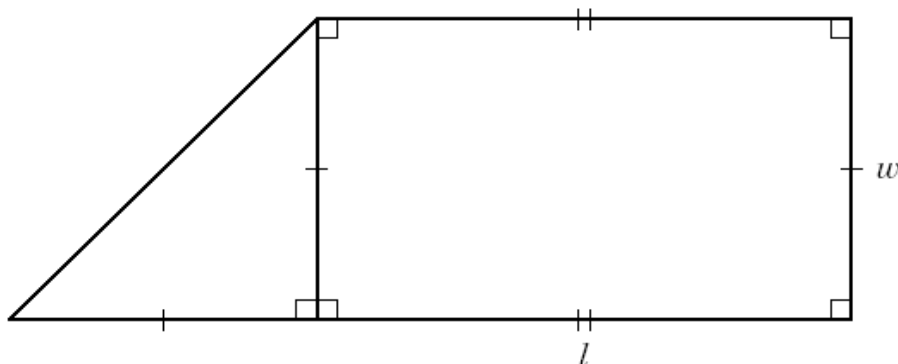
B 94 feet

C 120 feet

D 188 feet

11th Grade 2004

- 51** Find the equation that can be used to determine the total area of the composite figure shown below.



A $A = lw + \frac{1}{2}w^2$

B $A = lw + w^2$

C $A = w + 2l + w^2$

D $A = w + 2l + \frac{1}{2}w^2$

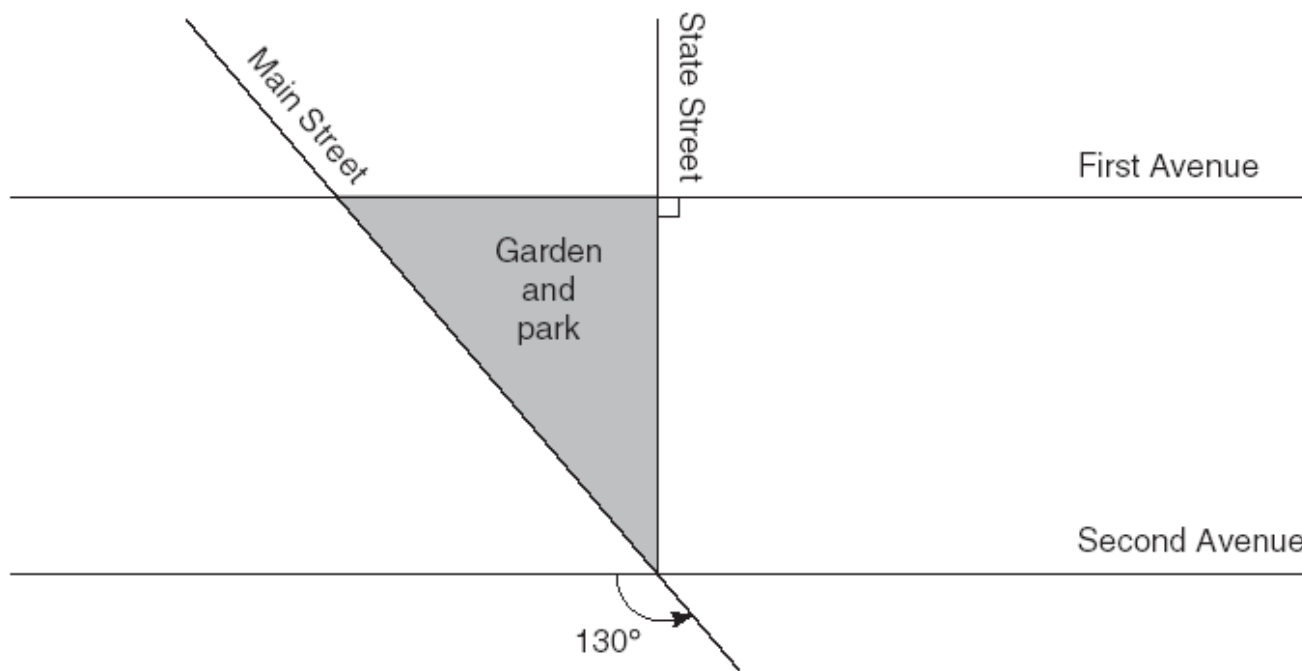
11th Grade 2003

HIGH SCHOOL Math TEKS Focus
Objective Six

Geometry (c1A)

Generalize about geometric properties, including properties of polygons, ratios in similar figures and solids, and angle relationships in polygons and circles

- 2 On the map below, First Avenue and Second Avenue are parallel. A city planner proposes to locate a small garden and park on the triangular island formed by the intersections of four streets shown below.



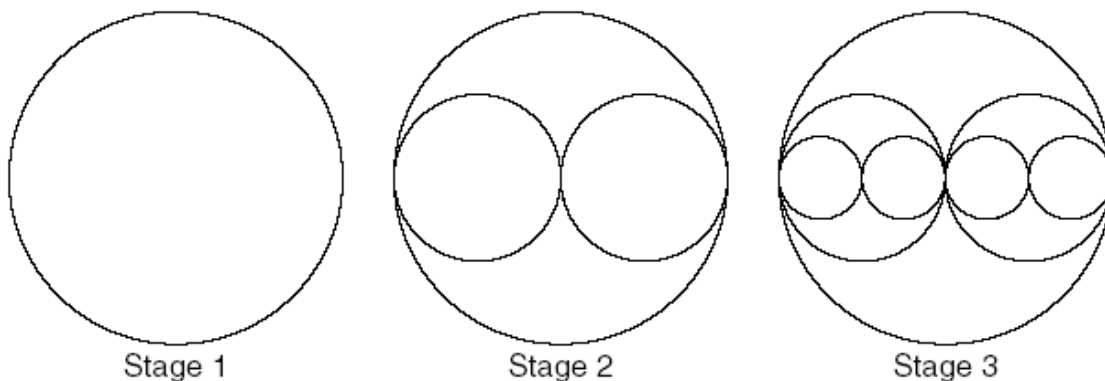
What are the measures of the three angles of the garden?

- F** $90^\circ, 65^\circ, 25^\circ$
- G** $90^\circ, 50^\circ, 40^\circ$
- H** $90^\circ, 60^\circ, 30^\circ$
- J** $130^\circ, 40^\circ, 10^\circ$

11th Grade 2003

HIGH SCHOOL Math TEKS Focus Objective Six

- 34 The figure below shows the first 3 stages of a fractal.



How many circles will the n th stage of this fractal contain?

- F** $2n$
- G** 2^n
- H** $2n - 1$
- J** $2^n - 1$

11th Grade 2003

- 5 Use the table to determine the expression that best represents the number of diagonals of any convex polygon having n sides.

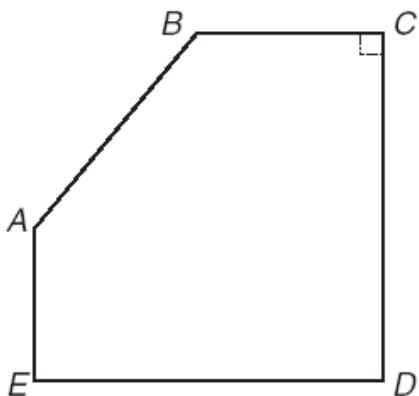
Polygon	Number of Sides	Number of Diagonals
Triangle	3	0
Quadrilateral	4	2
Pentagon	5	5
Hexagon	6	9
Heptagon	7	14
Octagon	8	20

- A** $n - 3$
- B** $\frac{n - 3}{2}$
- C** $\frac{n(n - 3)}{2}$
- D** $n(n - 3)$

11th Grade 2004

HIGH SCHOOL Math TEKS FOCUS Objective SIX

- 21 In the figure shown below, \overline{BC} is parallel to \overline{ED} , and \overline{AE} is perpendicular to \overline{ED} . The measure of $\angle ABC$ is 130° .



What is the measure of $\angle BAE$ in degrees?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

11th Grade 2004

Geometry (c1B)

Use properties of transformations and their compositions to make connections between mathematics and the real world in applications such as tessellations or fractals

No Test Items Available

Geometry (c1C)

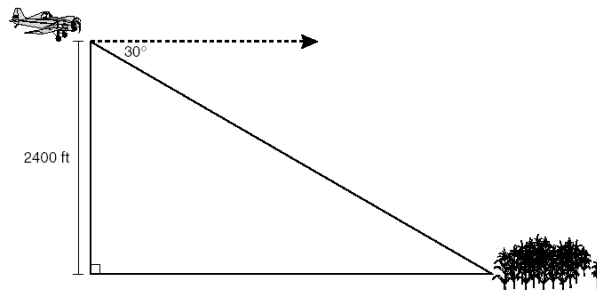
Identify and apply patterns from right triangles to solve problems, including special right triangles (45-45-90 & 30-60-90) and triangles whose sides are Pythagorean triples

- 20 A fence around a square garden has a perimeter of 48 feet. Find the approximate length of the diagonal of this square garden.

F 12 ft
G 17 ft
H 21 ft
J 24 ft

11th Grade 2003

- 30 Mr. Ryan is flying his single-engine plane at an altitude of 2400 feet. He sees a cornfield at an angle of depression of 30° .



What is Mr. Ryan's approximate horizontal distance from the cornfield at this point?

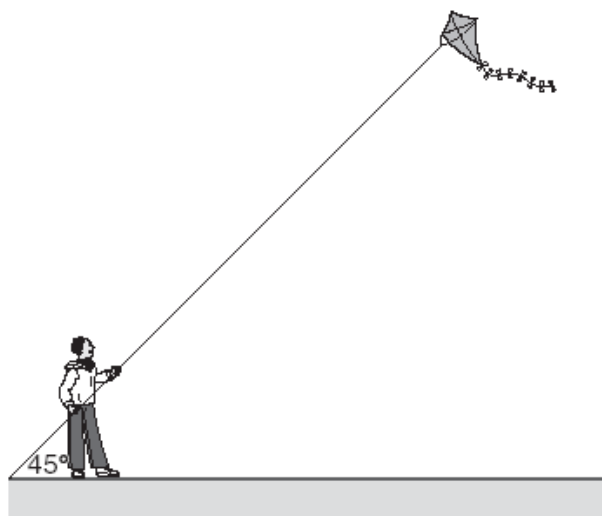
F 1200 ft
G 3394 ft
H 4157 ft
J 4800 ft

11th Grade 2003

High School Math TEKS Focus

Objective Six

- 12 A kite string is 220 feet long from the kite to the ground. The string makes a 45° angle with the ground.



About how high off the ground is the kite?

- F 110 ft
- G 127 ft
- H 156 ft
- J 311 ft

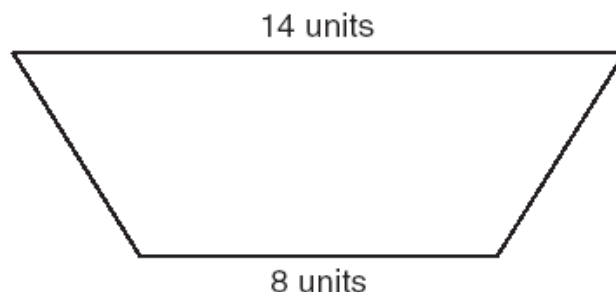
11th Grade 2004

- 19 Megan is using an equilateral triangle as part of a design on a sweatshirt. Each side of the triangle is 12 inches long. Megan is sewing a line of sequins from the midpoint of one side of this triangle to the opposite vertex. Approximately how long will the line of sequins be?

- A 13.4 in.
- B 10.4 in.
- C 8.5 in.
- D 5.2 in.

11th Grade 2004

- 46 The lengths of the bases of an isosceles trapezoid are shown below.



If the perimeter of this trapezoid is 32 units, what is its area?

- F 44 square units
- G 110 square units
- H 88 square units
- J 55 square units

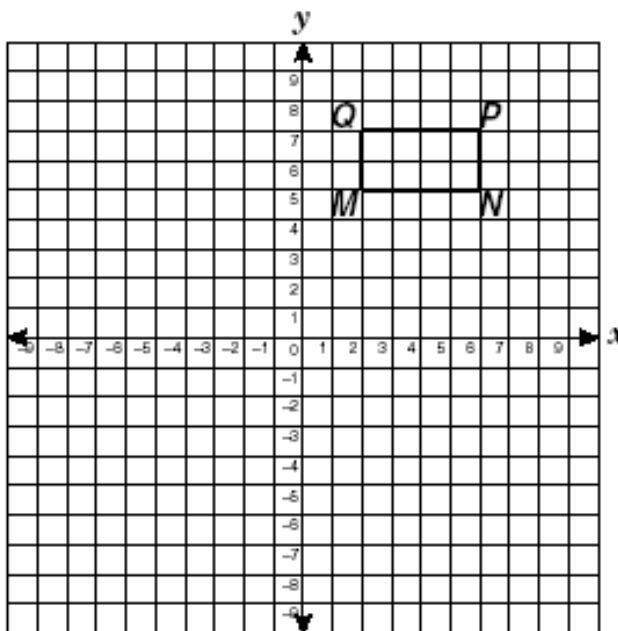
11th Grade 2004

High School Math TEKS Focus
Objective Six

Geometry (e3A)

Use congruence transformations to make conjectures and justify properties of geometric figures

27 Figure $MNPQ$ is shown on the coordinate plane.



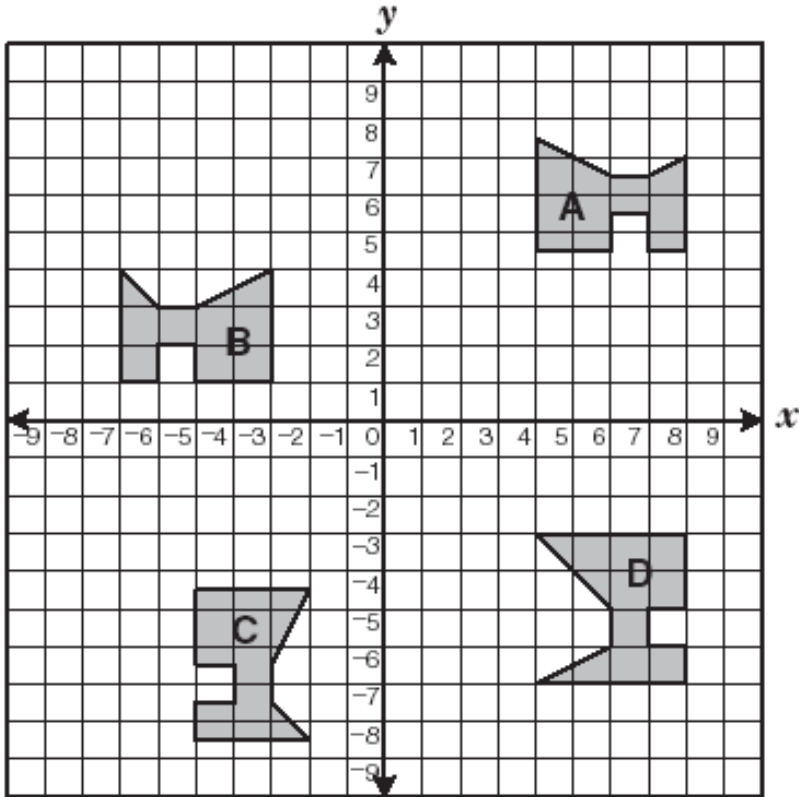
Which transformation creates an image with a vertex at the origin?

- A Rotate figure $MNPQ$ 90° around M
- B Reflect figure $MNPQ$ across the line $x = 1$
- C Reflect figure $MNPQ$ across the line $y = 2.5$
- D Translate figure $MNPQ$ to the left 6 and down 5

11th Grade 2003

High School Math TEKS Focus
Objective Six

10 Which pair of the following polygons is congruent?



- F Polygon A and Polygon C
- G Polygon B and Polygon D
- H Polygon A and Polygon B
- J Polygon B and Polygon C

11th Grade 2004