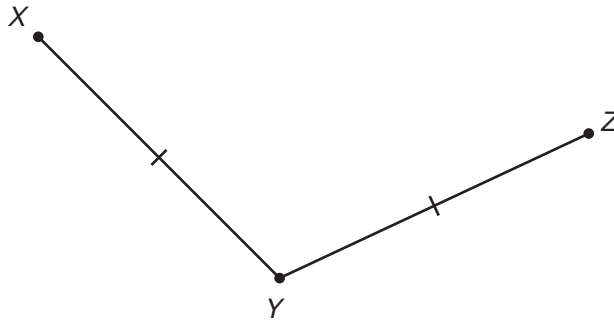


Geometry

2011 Released Test Questions

These released questions represent selected TEKS student expectations for each reporting category. These questions are samples only and do not represent all the student expectations eligible for assessment.

- 1 The figure below was formed by joining 2 segments of equal length at common endpoint Y .



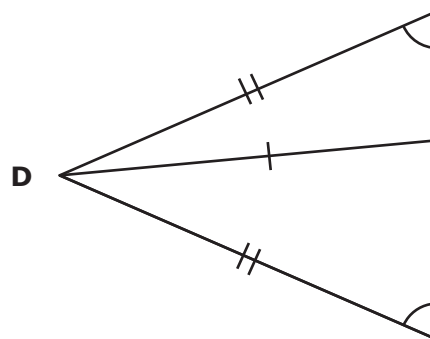
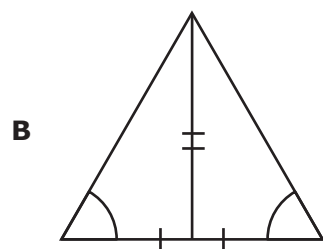
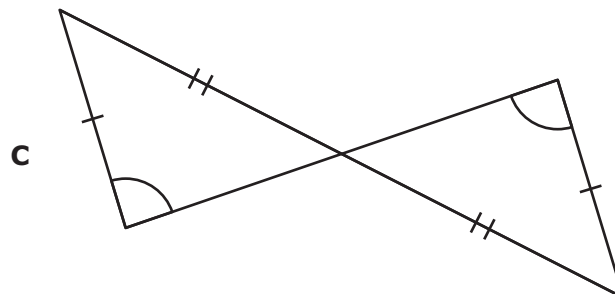
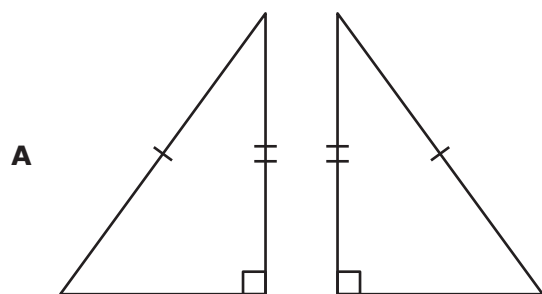
If points X , Y , and Z are non-collinear, which of the following statements regarding XZ must always be true?

- A $XZ = XY$
- B $XZ = 2(XY)$
- C $XZ > 2(XY)$
- D $XZ < 2(XY)$

2 A geometry student concluded:

If two sides and a non-included angle of one triangle are congruent to two sides and a non-included angle of another triangle, then the two triangles are congruent.

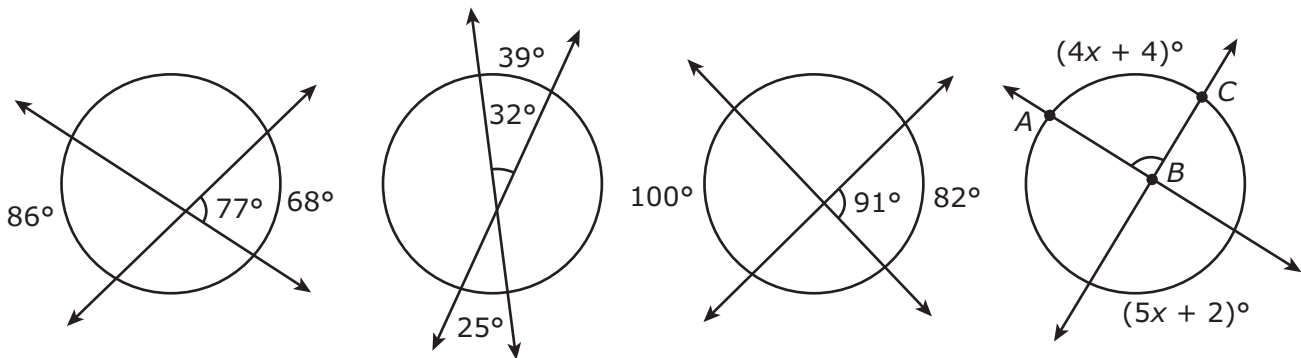
Which diagram can be used as a counterexample to the student's conclusion?



3 Which set of statements represents a valid deductive argument?

- A All quadrilaterals have 4 angles.
All parallelograms have 4 angles.
All quadrilaterals are parallelograms.
- B All parallelograms have diagonals that bisect each other.
All parallelograms have opposite sides that are parallel.
All polygons whose diagonals bisect each other have opposite sides that are parallel.
- C All rectangles have 4 right angles.
All squares have 4 right angles.
All rectangles are squares.
- D All parallelograms have 4 sides.
All polygons with 4 sides are quadrilaterals.
All parallelograms are quadrilaterals.

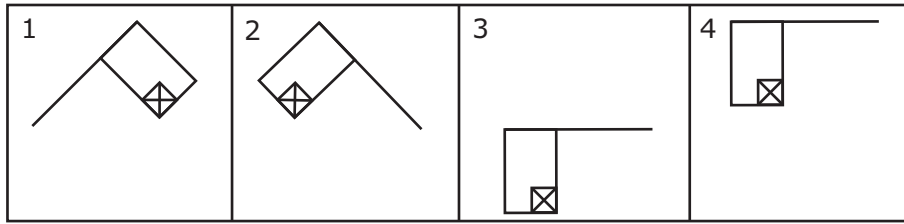
4 In each of the circles below, four angles are formed by the intersection of 2 secant lines. The measures of two intercepted arcs and one angle are shown for the first three circles.



Which expression can be used to represent $m\angle ABC$ in degrees?

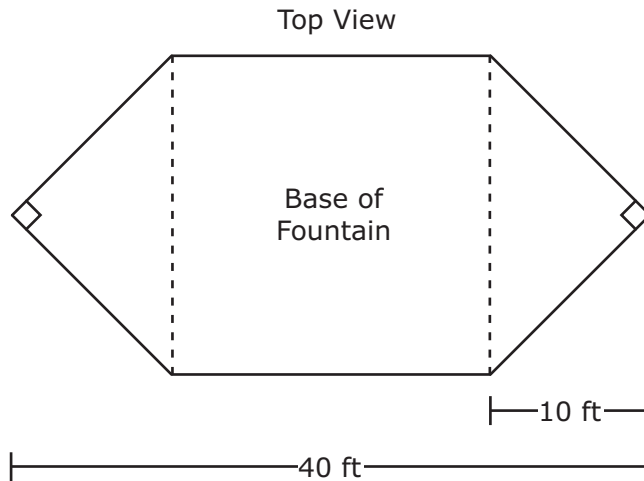
- A $\frac{1}{2}[(5x + 2) - (4x + 4)]$
- B $\frac{1}{2}[(5x + 2) + (4x + 4)]$
- C $2[(5x + 2) - (4x + 4)]$
- D $2[(5x + 2) + (4x + 4)]$

- 5 Jake took pictures of Ana’s flag while she was practicing her routine for the football game, as shown below.



Which of the following best describes the movement of the flag from picture to picture?

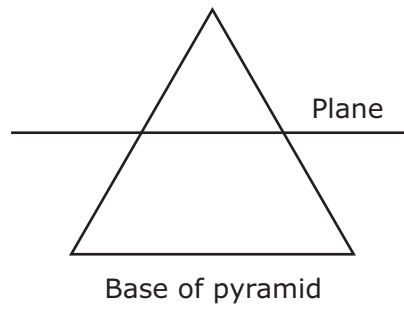
- A Reflection, rotation, translation
 - B Rotation, translation, translation
 - C Rotation, translation, dilation
 - D Reflection, translation, translation
-
- 6 When viewed from above, the base of a water fountain has the shape of a hexagon composed of a square and 2 congruent isosceles right triangles, as represented in the diagram below.



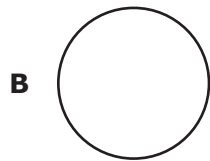
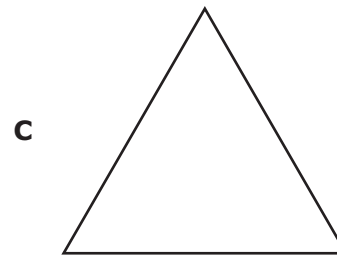
Which of the following measurements best represents the perimeter of the water fountain’s base in feet?

- A $(20 + 20\sqrt{2})$ ft
- B $(20 + 40\sqrt{2})$ ft
- C $(40 + 20\sqrt{2})$ ft
- D $(40 + 40\sqrt{2})$ ft

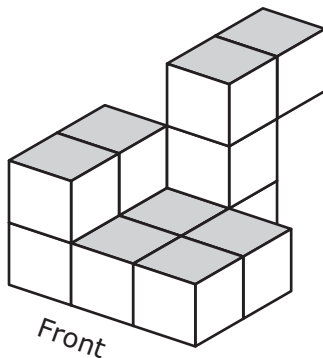
7 A side view of the intersection of a plane and a square pyramid is modeled below.



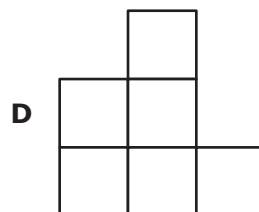
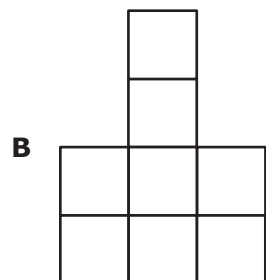
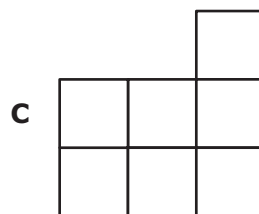
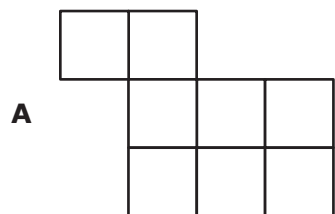
Which of the following best represents the shape formed by this intersection?



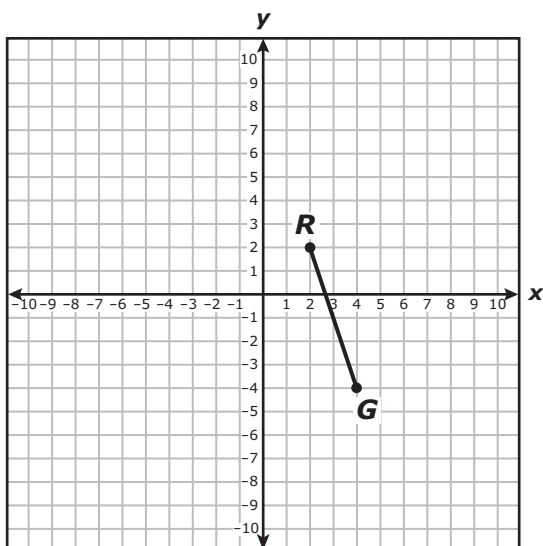
8 The three-dimensional figure shown is composed of 11 identical cubes.



Which of the following could not represent a top, front, or side view of the figure?



- 9 \overline{RG} is graphed on the coordinate grid below.



Which of the following equations best represents the perpendicular bisector of \overline{RG} ?

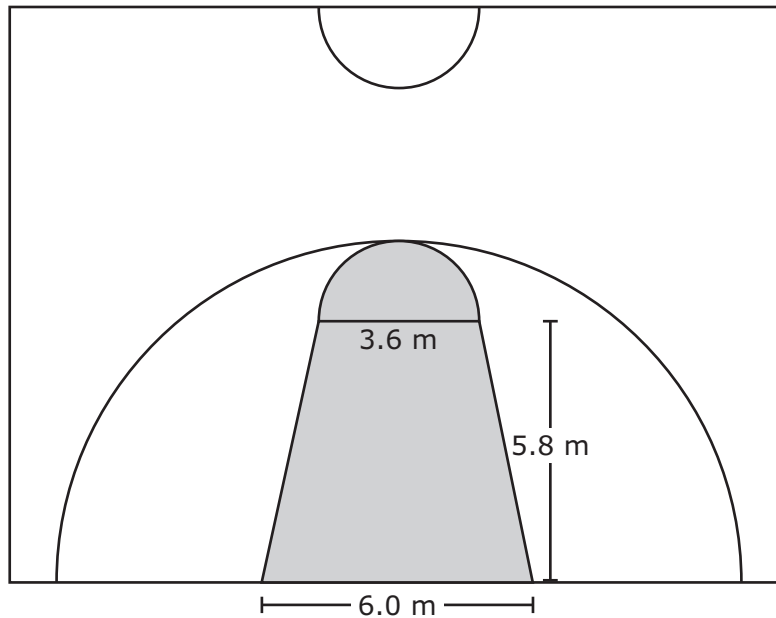
A $y = \frac{1}{3}x - 2$

C $y = 3x - 10$

B $y = -3x + 8$

D $y = -\frac{1}{3}x + 1$

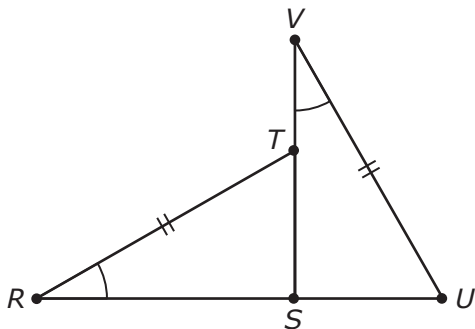
- 10 Half of an international basketball court is shown below. The shaded region is composed of an isosceles trapezoid and a semicircle. The diameter of the semicircle is 3.6 meters.



If 1 meter is approximately equal to 3.28 feet, which of the following is closest to the area of the shaded region in square feet?

- A 32.9 ft²
 - B 409 ft²
 - C 354 ft²
 - D 108 ft²
-
- 11 In quadrilateral $ABCD$, $\overline{AB} \parallel \overline{CD}$, $\angle A \cong \angle B$, and $\overline{AB} \neq \overline{CD}$. Which of the following statements is a reasonable conclusion?
- A $m\angle A \cong m\angle C$
 - B Quadrilateral $ABCD$ is a rectangle.
 - C Quadrilateral $ABCD$ is an isosceles trapezoid.
 - D $\overline{AD} \parallel \overline{BC}$

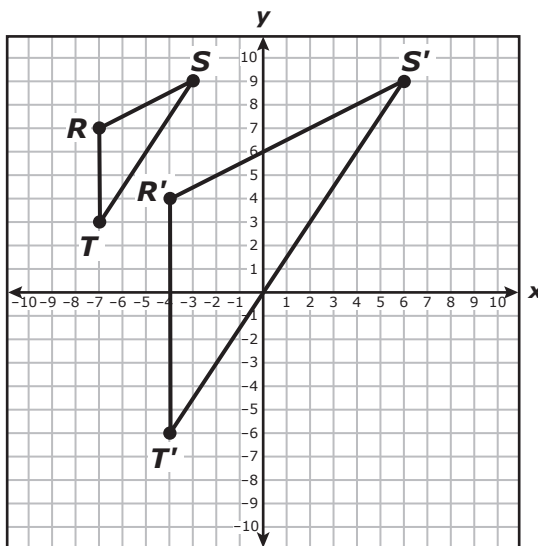
12 Triangles RST and VSU are shown below.



$\angle R \cong \angle V$, and $\overline{RT} \cong \overline{VU}$. Which additional condition is sufficient to prove that $\overline{RS} \cong \overline{SV}$?

- A $\overline{TS} \cong \overline{SU}$
- B $\overline{VS} \perp \overline{RU}$
- C $\overline{RS} \cong \overline{SU}$
- D $\angle VUS \cong \angle RST$

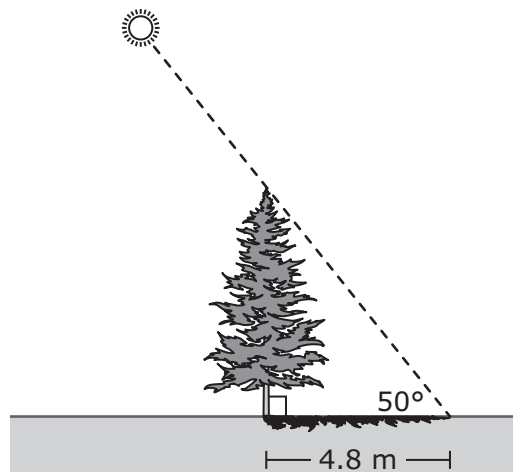
13 Triangle RST was dilated to create triangle $R'S'T'$, as shown on the coordinate grid below.



Which statement appears to be true?

- A The center of dilation used to create $\triangle R'S'T'$ was $(-10, 8)$.
- B $\triangle RST$ and $\triangle R'S'T'$ are congruent.
- C The scale factor used to create $\triangle R'S'T'$ is 2.5.
- D $\triangle RST$ was reduced in size to create $\triangle R'S'T'$.

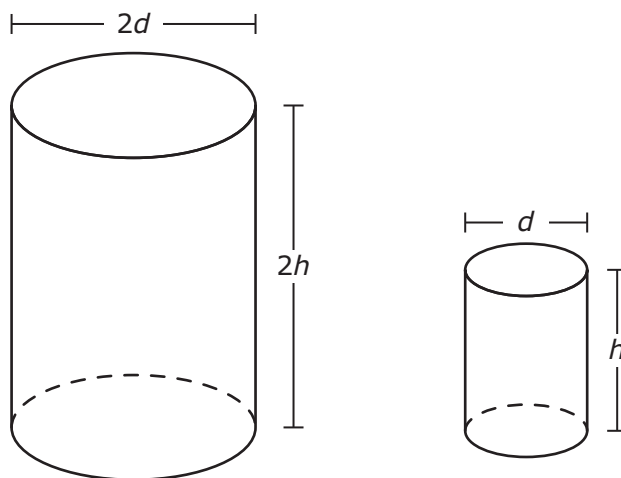
- 14 A tree's shadow is 4.8 m long on level ground, as shown in the diagram.



The angle of elevation from the tip of the shadow to the sun is 50° . Based on this information, which of the following is closest to the height of the tree?

- A 3.6 m
- B 5.7 m
- C 3.1 m
- D 7.5 m

- 15** A company packages their product in two sizes of cylinders. Each dimension of the larger cylinder is twice the size of the corresponding dimension of the smaller cylinder.



Based on this information, which of the following statements is true?

- A** The volume of the larger cylinder is 2 times the volume of the smaller cylinder.
- B** The volume of the larger cylinder is 4 times the volume of the smaller cylinder.
- C** The volume of the larger cylinder is 8 times the volume of the smaller cylinder.
- D** The volume of the larger cylinder is 6 times the volume of the smaller cylinder.

Item Number	Reporting Category	Readiness or Supporting	Content Student Expectation	Correct Answer
1	1	Readiness	G.2(B)	D
2	1	Readiness	G.3(C)	D
3	1	Supporting	G.3(E)	D
4	2	Readiness	G.5(A)	B
5	2	Supporting	G.5(C)	A
6	2	Readiness	G.5(D)	D
7	3	Supporting	G.6(A)	D
8	3	Supporting	G.6(C)	C
9	3	Readiness	G.7(B)	A
10	4	Supporting	G.8(F)	C
11	4	Supporting	G.9(B)	C
12	4	Readiness	G.10(B)	B
13	5	Supporting	G.11(A)	C
14	5	Readiness	G.11(C)	B
15	5	Readiness	G.11(D)	C

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