

# Domain #3: Geometry

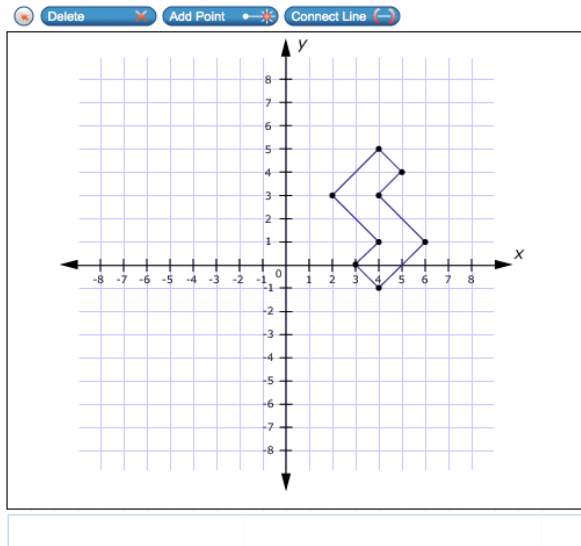
(Relevant Units: Unit 5 – Geometry, Unit 10 – Translations)

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Use the Connect Line tool to draw the image of the figure after the following transformations:

- a reflection over the  $x$ -axis
- a horizontal translation 7 units to the left



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Segment  $FG$  begins at point  $F(-2, 4)$  and ends at point  $G(-2, -3)$ . The segment is translated by  $\langle x - 3, y + 2 \rangle$  and then reflected across the  $y$ -axis to form segment  $F'G'$ .

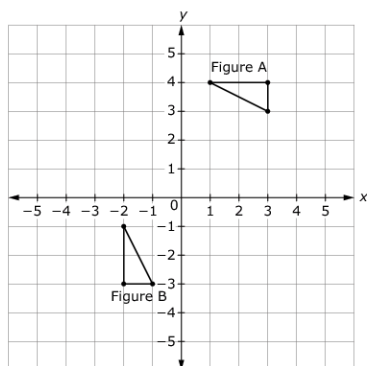
How many units long is segment  $F'G'$ ?

- (A) 0
- (B) 2
- (C) 3
- (D) 7

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Two figures are shown on the coordinate grid.

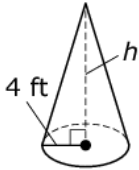


Show that Figure A and Figure B are congruent by describing a sequence of basic transformations that maps Figure A onto Figure B. In your response, be sure to identify the transformations in the order they are performed.

A sequence of transformations is applied to a polygon. Select **all** statements which indicate a sequence of transformations where the resulting polygon has an area greater than the original polygon.

- Reflect over the  $x$ -axis, dilate about the origin by a scale factor of  $\frac{1}{2}$ , translate up 5 units.
- Rotate  $90^\circ$  counterclockwise around the origin, dilate about the origin by a scale factor of  $\frac{3}{2}$ .
- Dilate about the origin by a scale factor of  $\frac{2}{3}$ , rotate  $180^\circ$  clockwise around the origin, translate down 2 units.
- Dilate about the origin by a scale factor of 2, reflect over the  $y$ -axis, dilate about the origin by a scale factor of  $\frac{2}{3}$ .

A cone with radius 4 feet is shown. Its approximate volume is 165 cubic feet.

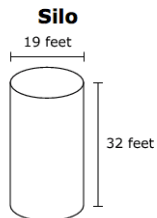


Enter the height of the cone, in feet. Round your answer to the nearest hundredth.

← → ↶ ↷ ✖

1	2	3
4	5	6
7	8	9
0	.	-

An empty corn silo in the shape of a cylinder is being filled with corn.

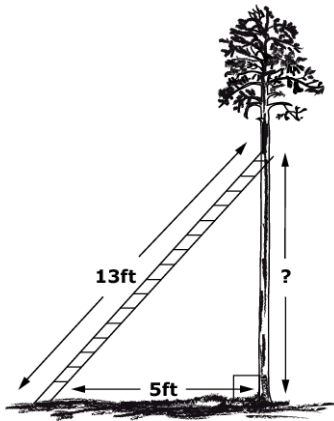


The silo is filled at a constant rate for a total of 10 hours. The table shows the amount of corn, in cubic feet, in the silo at the given number of hours after filling started.

Number of Hours	Amount of Corn (cu ft)
0	0
3	2475
5	4125
8	6600

Enter the **percent** of the silo that is filled with corn at 10 hours.

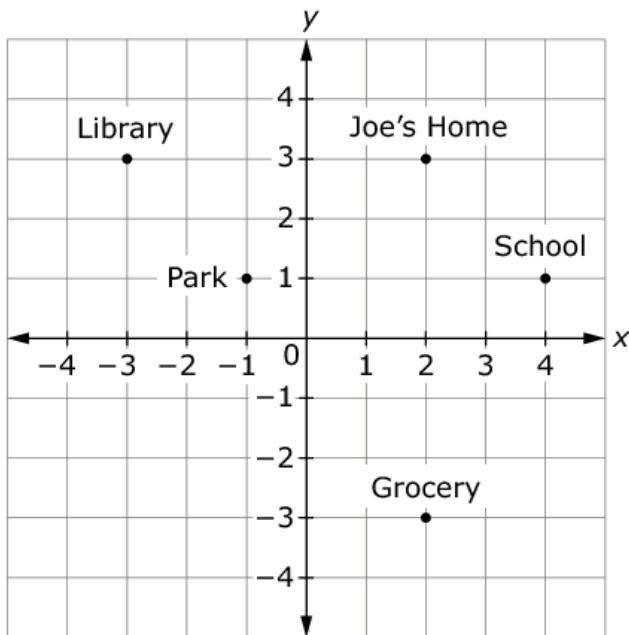
A 13-foot ladder is leaning on a tree. The bottom of the ladder is on the ground at a distance of 5 feet from the base of the tree. The base of the tree and the ground form a right angle as shown.



Enter the distance, in feet, between the ground and the top of the ladder.

The points show different locations in Joe's town. Each unit represents 1 mile.

### Places in Joe's Town



Enter the shortest distance, in miles, between Joe's home and the park. Round your answer to the nearest tenth.