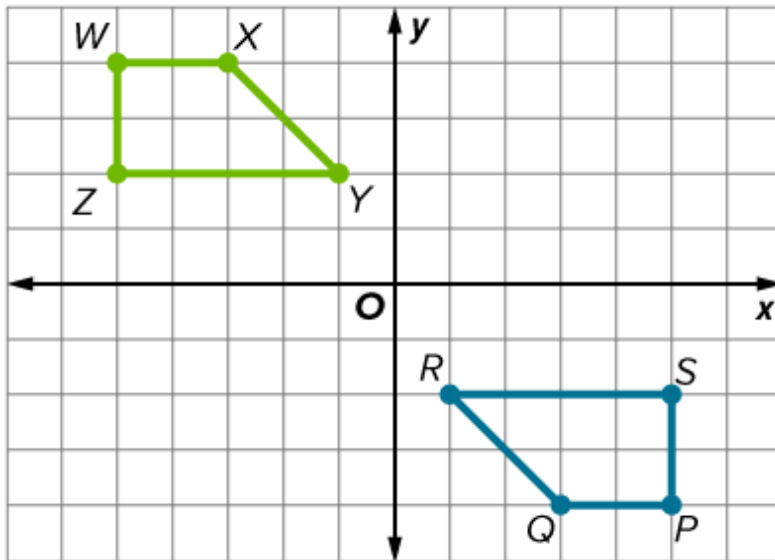


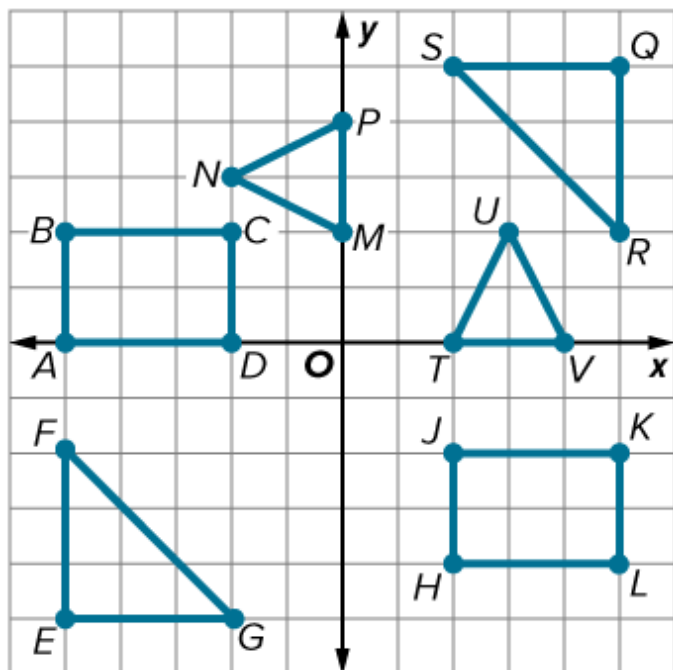
Grade 8 Term 3 - M9

- 1) Describe a congruence transformation that maps quadrilateral $PQRS$ onto quadrilateral $WXYZ$.



Grade 8 Term 3 - M9

2) Which pair of figures are congruent after a 180° rotation about the origin?

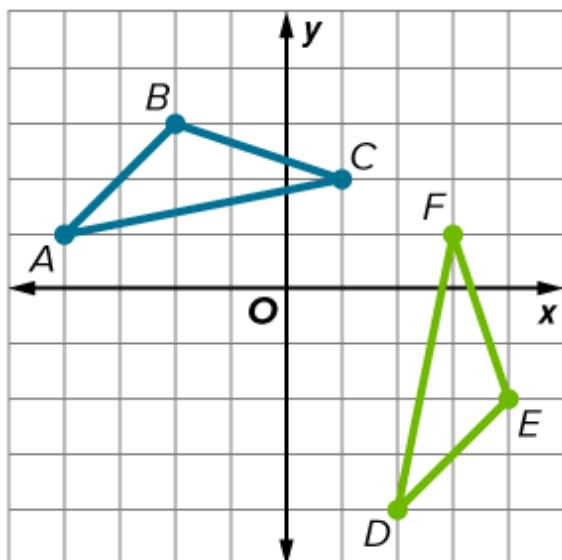


- ☐ A) triangle EFG and triangle QRS
- ☐ B) triangle MNP and triangle TUV
- ☐ C) triangle EFG and triangle UTV
- ☐ D) rectangle $HJKL$ and rectangle $ABCD$

Grade 8 Term 3 - M9

3) Fill in the blanks using the available answer choices.

Triangle ABC is congruent to triangle DEF . Complete the statement about the congruence transformation that maps triangle ABC to triangle DEF .



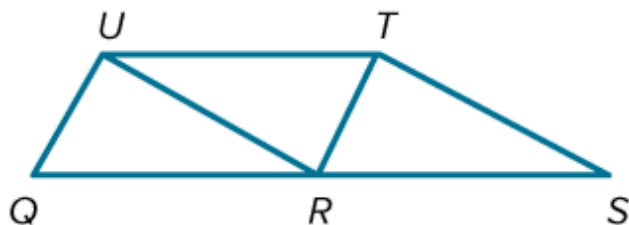
A reflection across the line $y = x$, followed by a translation _____ unit(s).
(Blank 1)

Blank 1 options

- left 1
- right 1
- up 1
- down 1
- left 5
- right 5
- up 5
- down 5

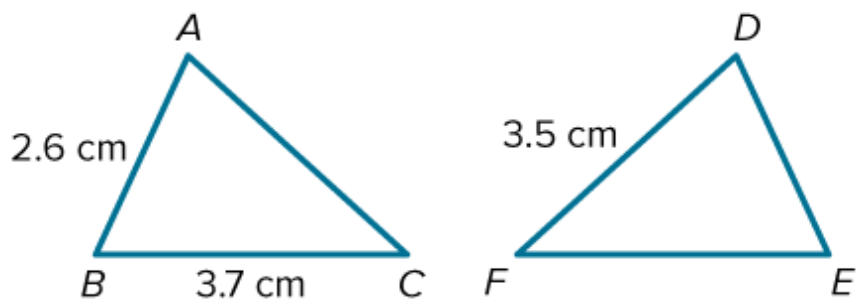
Grade 8 Term 3 - M9

- 5) In the figure, $\triangle QRU \cong \triangle RST \cong \triangle TUR$.



Travis claims that line segment QS is twice as long as line segment QR . Is Travis correct? Explain your reasoning.

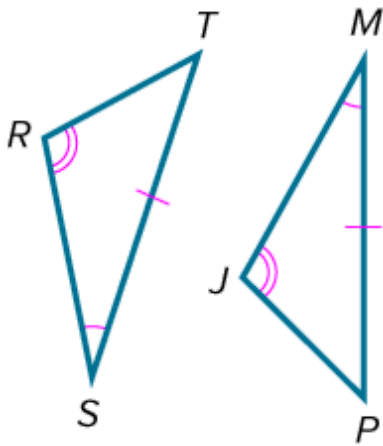
- 6) In the diagram, $\triangle ABC \cong \triangle DEF$. Find the perimeter of triangle ABC .



_____ cm

Grade 8 Term 3 - M9

7) In the figure shown, $\triangle RST \cong \triangle JMP$.

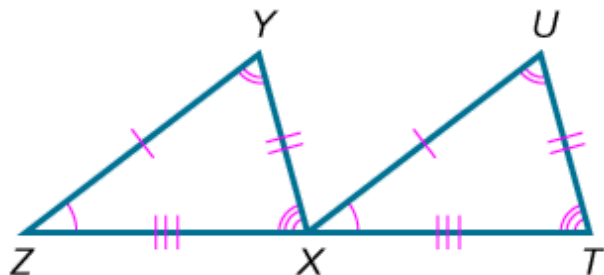


Indicate whether each of the following statements is correct regarding the congruency of these triangles.

	Correct	Incorrect
$\overline{RT} \cong \overline{JM}$	☐	☐
$\overline{ST} \cong \overline{MP}$	☐	☐
$\overline{JM} \cong \overline{RS}$	☐	☐
$\angle S \cong \angle M$	☐	☐
$\angle S \cong \angle P$	☐	☐
$\angle R \cong \angle J$	☐	☐

Grade 8 Term 3 - M9

- 8) The following triangles represent rafters in a building. If $m\angle Z = 55^\circ$ and $m\angle U = 65^\circ$, what is the measure of $\angle YXZ$?



_____°

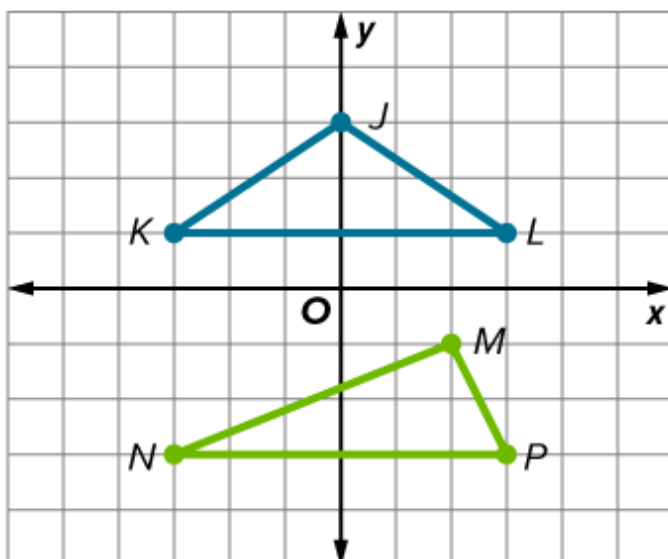
- 9) If $\triangle ABC \cong \triangle JKL$, which of the following must be a true congruence statement?

- ☐ A) $\angle A \cong \angle K$
☐ B) $\angle B \cong \angle L$
☐ C) $\overline{AB} \cong \overline{JK}$
☐ D) $\triangle BAC \cong \triangle LKJ$

Grade 8 Term 3 - M9

10A) Fill in the blanks using the available answer choices.

Consider the following triangles.



Are the triangles similar? _____
(Blank 1)

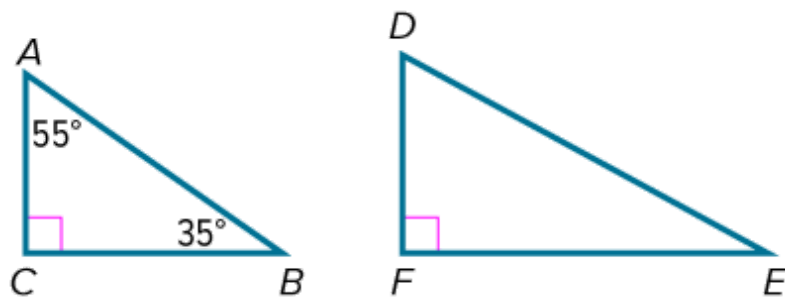
Blank 1 options

- yes
- no

10B) If the triangles are similar, describe the sequence of transformations that maps triangle JKL onto MNP . If the triangles are not similar, explain why they are not similar.

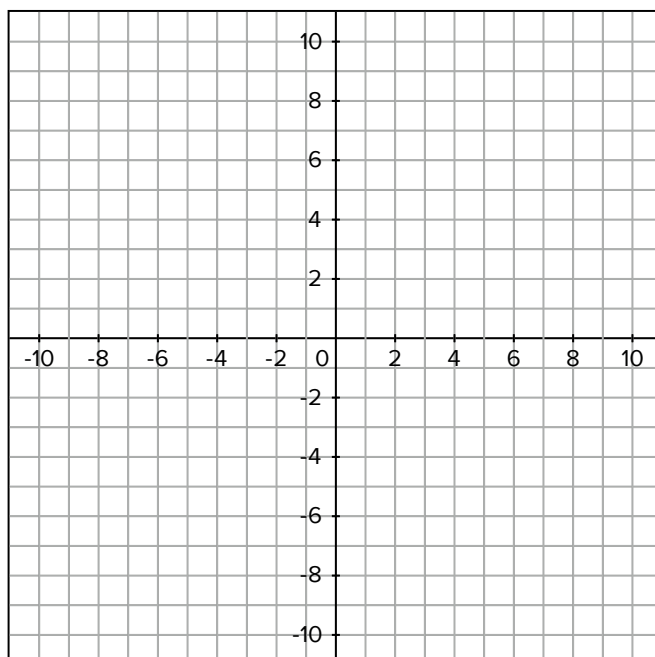
Grade 8 Term 3 - M9

- 11) Triangles ABC and DEF are similar. What is the measure of angle E ?



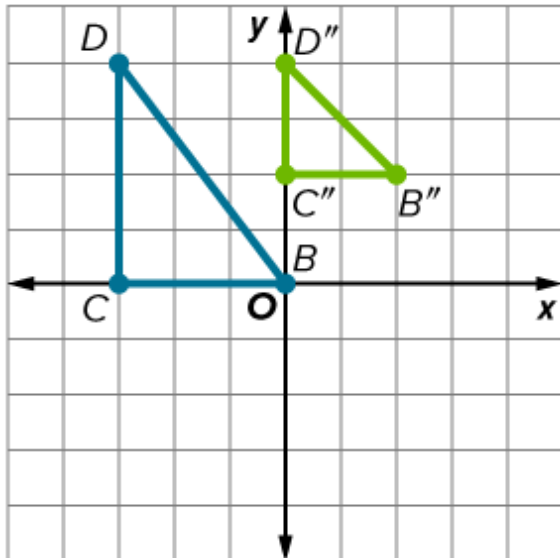
_____ $^\circ$

- 12) Triangle JKM has vertices $J(0, 4)$, $K(4, 4)$, and $M(0, 3)$. Graph the image after the sequence of transformations that includes a dilation with a scale factor of 2, followed by a reflection about the x -axis.

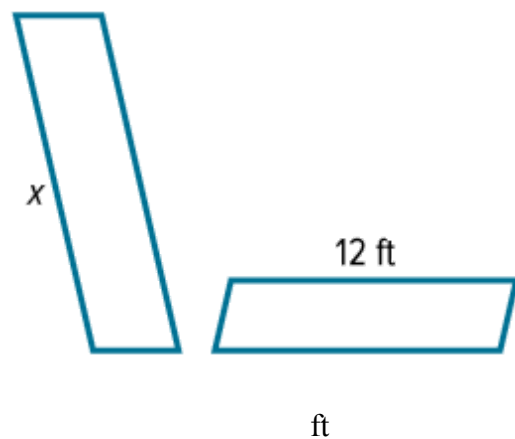


Grade 8 Term 3 - M9

- 13)** Consider the two triangles. If the triangles are similar, describe a sequence of transformations that maps one figure onto the other. If the triangles are not similar, explain why they are not similar.

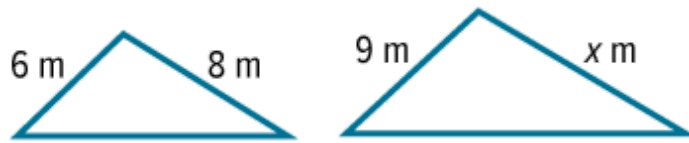


- 14)** The following quadrilaterals are similar. If the ratio of the perimeter of the left quadrilateral to the perimeter of the right quadrilateral is 4:3, find the value of x .



Grade 8 Term 3 - M9

- 15)** The polygons are similar. Determine the value of x .

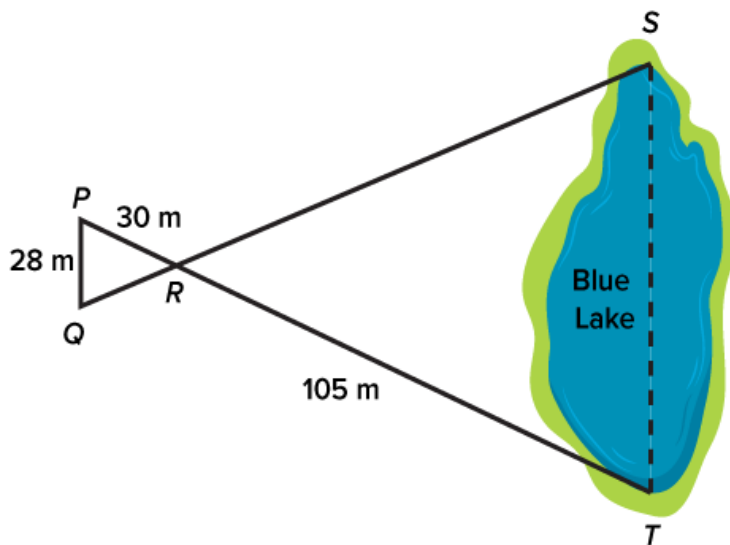


$x =$ _____ m

- 16)** Bonnie wants to reduce the size of a poster. The original dimensions of the poster are 12 inches by 15 inches. Which of the following could be the size of the poster after the reduction?

- ☐ **A)** 4 in. by 5 in.
☐ **B)** 6 in. by 8 in.
☐ **C)** 24 in. by 30 in.
☐ **D)** 36 in. by 45 in.

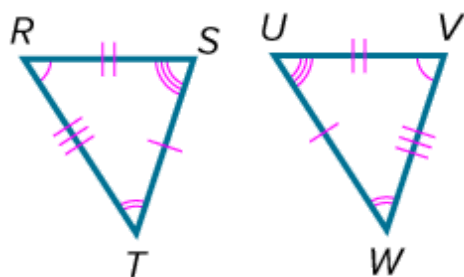
- 17)** Triangle QPR is similar to triangle STR . Determine the distance across Blue Lake.



_____ meters

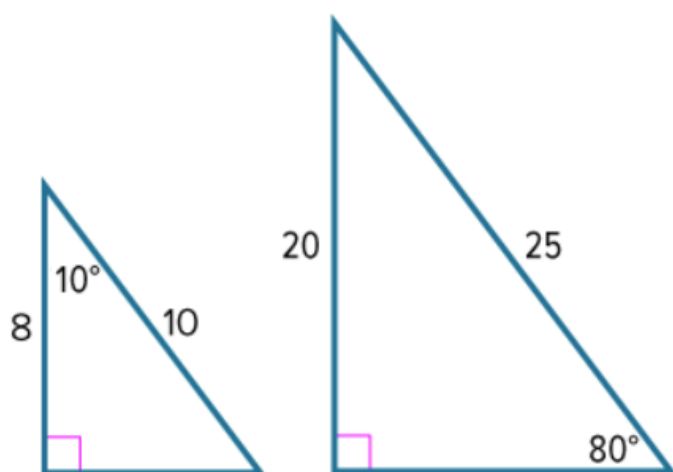
Grade 8 Term 3 - M9

18) Which of the following statements is *not* true regarding the similar triangles shown?



- ☐ A) $\overline{ST} \cong \overline{UW}$
☐ B) $\overline{RS} \cong \overline{VU}$
☐ C) $\overline{RT} \cong \overline{UV}$
☐ D) $\angle T \cong \angle W$

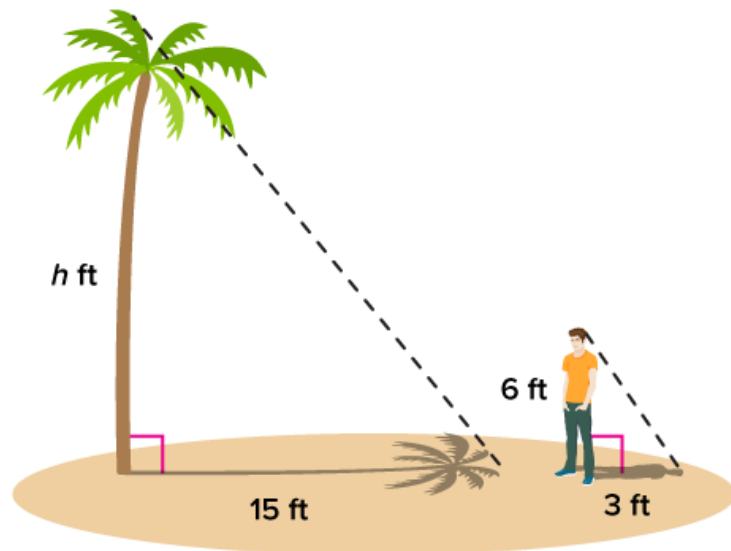
19) Complete the similarity ratio for the similar triangles.



$$\frac{8}{10} = \underline{\hspace{2cm}}$$

Grade 8 Term 3 - M9

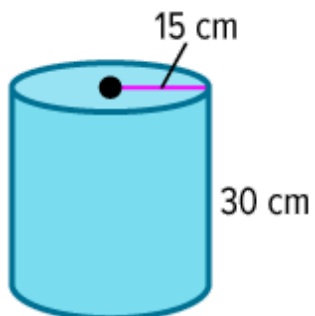
- 20)** Jack is 6 feet tall and casts 3-ft long shadow. A nearby palm tree casts a 15-ft long shadow. What is the height, h , of the palm tree?



_____ ft

Grade 8 Term 3 - M10F

- 1) What is the volume of the cylinder? Round to the nearest tenth.



_____ cm^3

- 2) Fill in the blanks using the available answer choices.

A steel drum is shaped like a cylinder. It has a height of 3 feet and a base diameter of 2 feet. What is the volume of the steel drum in cubic feet? Round to the nearest tenth.

_____ cubic feet
(Blank 1)

Blank 1 options

- 4.7
- 6.0
- 9.4
- 18.8

Grade 8 Term 3 - M10F

- 3) A vase with a base radius of 2 inches and a height of 8 inches weighs 5 ounces when empty. The vase is filled with water to the top. What is the volume of water in the vase? Describe how you found your answer. Round to the nearest tenth.



- 4) A swimming pool is shaped like a cylinder. It has a height of 4 feet and a base radius of 5 feet. The pool is being filled with water at a rate of 10 gallons per minute. About how long will it take to fill the pool if 1 cubic foot is about 7.5 gallons? Round to the nearest whole minute.

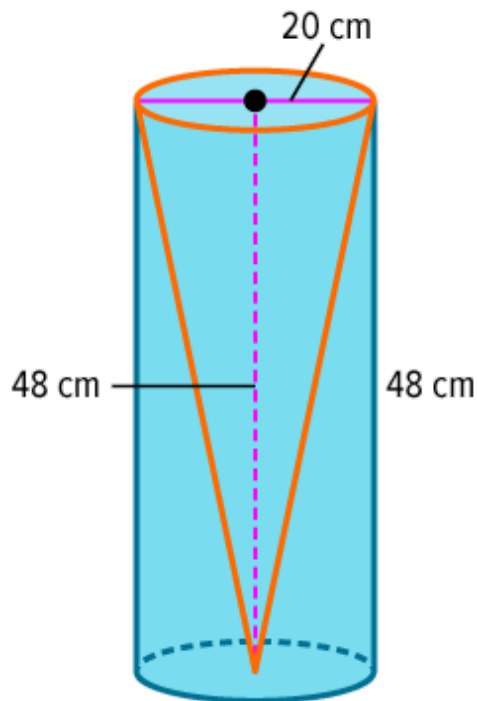
_____ minutes

Grade 8 Term 3 - M10F

- 5) A drinking glass is in the approximate shape of a cone. The height of the cone is 12 inches, and the base diameter is 3 inches. What is the volume of the glass to the nearest tenth?

_____ in³

- 6A) Andrew compares a cone-shaped container and a cylinder-shaped container by placing the cone inside the cylinder. He notices that each container has the same base diameter of 20 centimeters and the same height of 48 centimeters.



What is the volume of each container? Round to the nearest tenth.

cylinder: _____ cm³

cone: _____ cm³

Grade 8 Term 3 - M10F

- 6B)** Andrew plans on filling one of the containers with roasted peanuts. If he is charged per ounce for the peanuts, about how many times more will it cost him to fill the cylindrical container with peanuts than the cone-shaped container? Explain your reasoning.

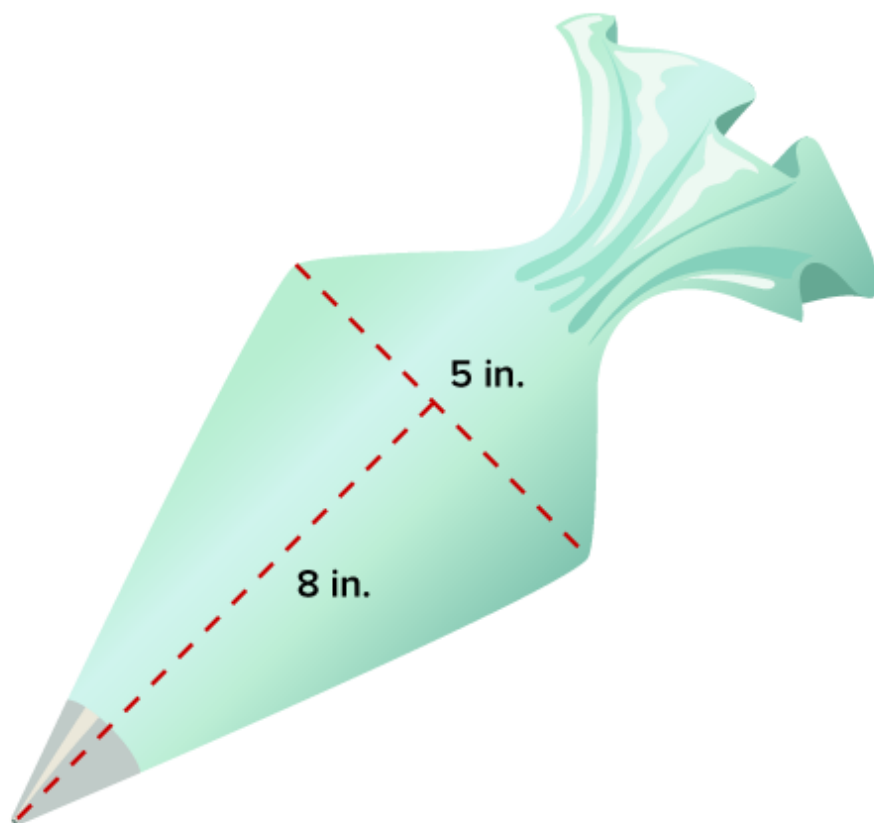
- 7)** A cone-shaped paperweight is made from maple wood. The height of the paperweight is 4 inches and the base diameter is 2.5 inches. What is the volume of the wooden paperweight to the nearest tenth?

_____ cubic inches

Grade 8 Term 3 - M10F

8) Fill in the blanks using the available answer choices.

Ramon is decorating cookies with frosting. He uses a bag shaped like a cone to hold the frosting. What is the volume of the cone-shaped bag to the nearest whole number?



about _____ cubic inches
(Blank 1)

Blank 1 options

- 40
- 52
- 105
- 209

9) The radius of a basketball is 9 inches. What is the volume of the basketball? Round to the nearest tenth.

_____ in³

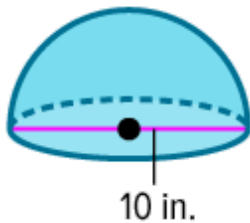
Grade 8 Term 3 - M10F

- 10)** The globe has a radius of 14 centimeters. What is the volume of the globe rounded to the nearest whole number?



_____ cubic centimeters

- 11)** What is the volume of the hemisphere? Round to the nearest tenth.

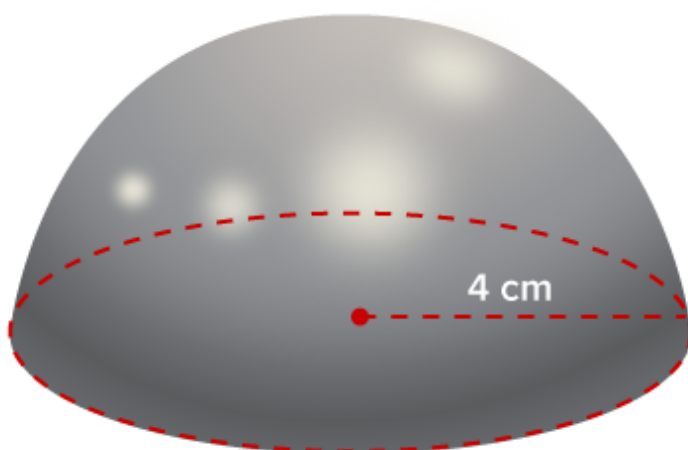


_____ in³

Grade 8 Term 3 - M10F

12) Fill in the blanks using the available answer choices.

Terrance took a metal sphere and split it in half. Complete the statement.



The volume of the hemisphere is about _____ cubic centimeters, which is
(Blank 1)
_____ the volume of the original sphere.
(Blank 2)

Blank 1 options

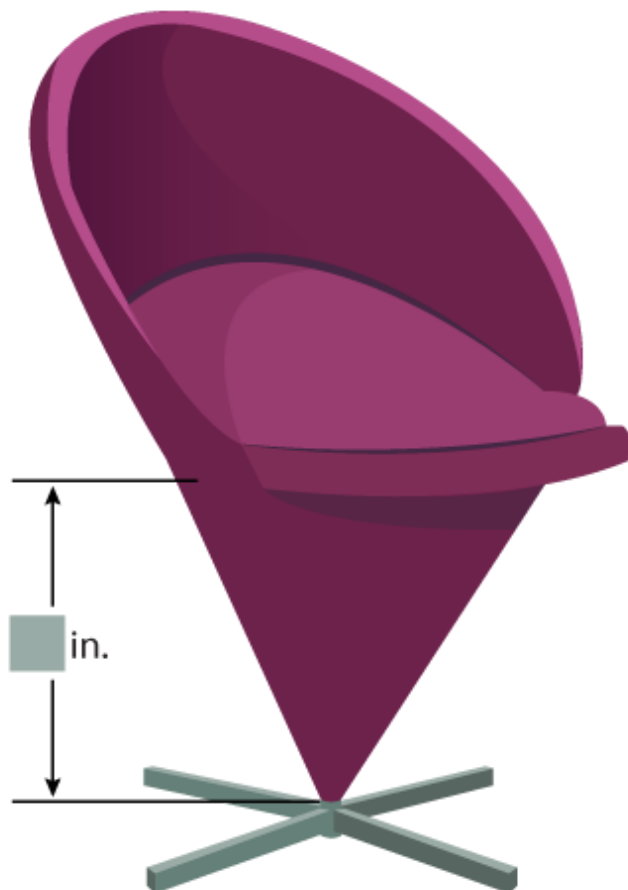
- 134
- 201
- 268
- 402

Blank 2 options

- one-third
- one-half
- two times
- three times

Grade 8 Term 3 - M10F

- 13)** Marice designed a chair with a conical base. The radius of the base of the cone is 12 inches. The volume of the cone is about 4,523.9 cubic inches. What is the height, to the nearest whole inch?



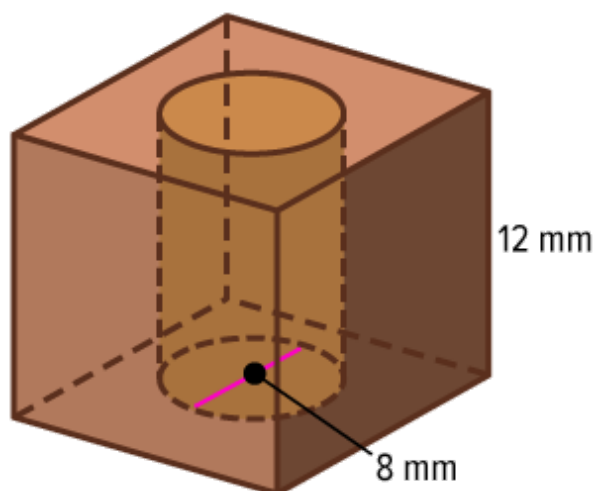
- ☐ 24
☐ 15
☐ 30
☐ 6

- 14)** The volume of a cylinder with a base radius of 15 centimeters is $5,400\pi$ cubic centimeters. What is the height of the cylinder?

_____ cm

Grade 8 Term 3 - M10F

- 15)** A cubic wooden bead has a circular hole through it, which creates a cylindrical shape. The height of the cylinder is the same as the cube's height. The base diameter of the cylinder is 8 millimeters. What is the volume of the wooden bead? Explain how you found your answer.

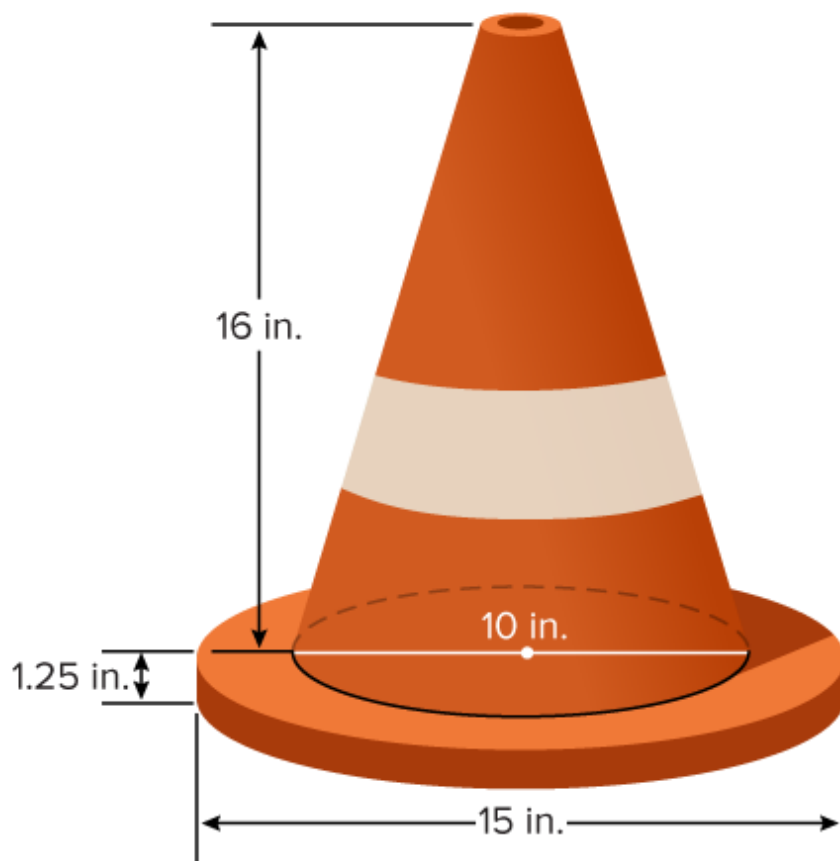


- 16)** The volume of a hemisphere is about 718.4 cubic feet. What is the radius of the hemisphere to the nearest whole number?

_____ ft

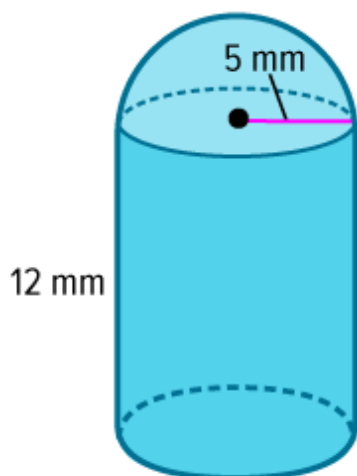
Grade 8 Term 3 - M10F

- 17)** A cone sits on a cylindrical platform. The cone has a base diameter of 10 inches and a height of 16 inches. The cylindrical base has a diameter of 15 inches and a height of 1.25 inches. What is the total volume of the composite solid, rounded to the nearest tenth? Explain how you found your answer.



Grade 8 Term 3 - M10F

18A) Karen bought a game piece for a board game with dimensions shown.



What is the volume of the game piece? Round to the nearest whole number.

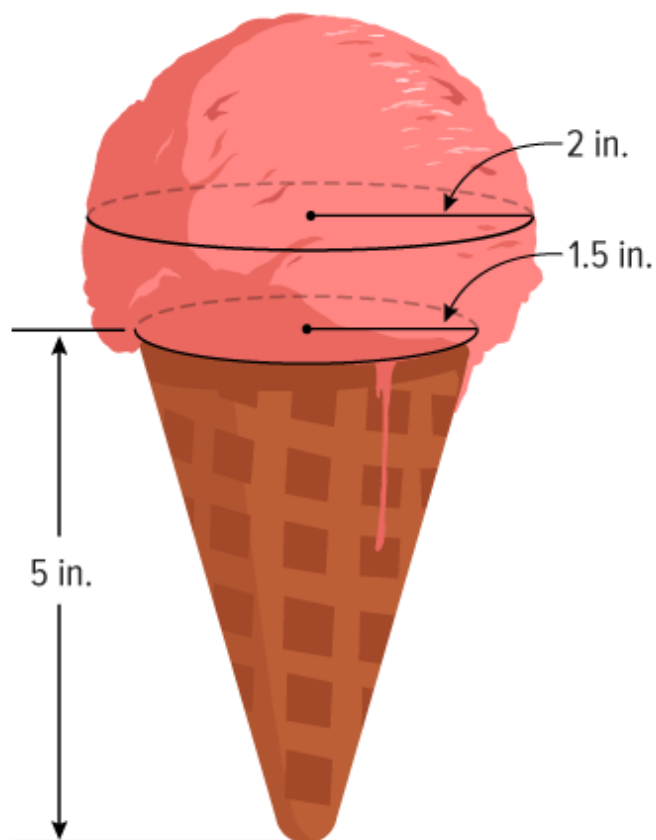
_____ mm³

18B) The game piece is made from a plastic with a density of 0.09 gram per cubic millimeter. What is the mass of the game piece? Round to the nearest whole number.

_____ g

Grade 8 Term 3 - M10F

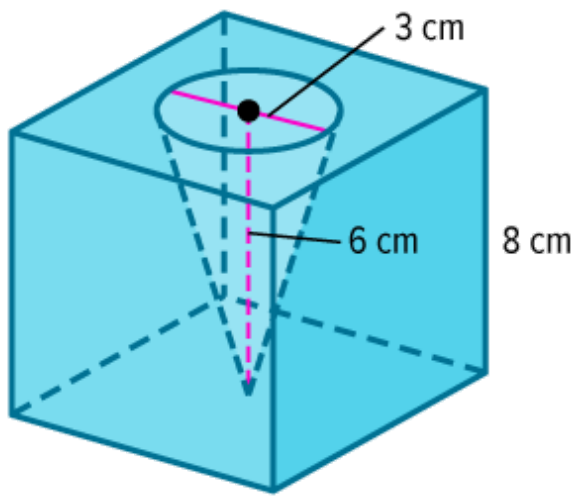
- 19)** Justine works at an ice cream shop. She fills the cone and then puts a spherical scoop of ice cream on the top of the cone. The sphere has a radius of 2 inches. The base radius of the cone is 1.5 inches. What is the total volume of the ice cream? Round to the nearest whole number.



_____ cubic inches

Grade 8 Term 3 - M10F

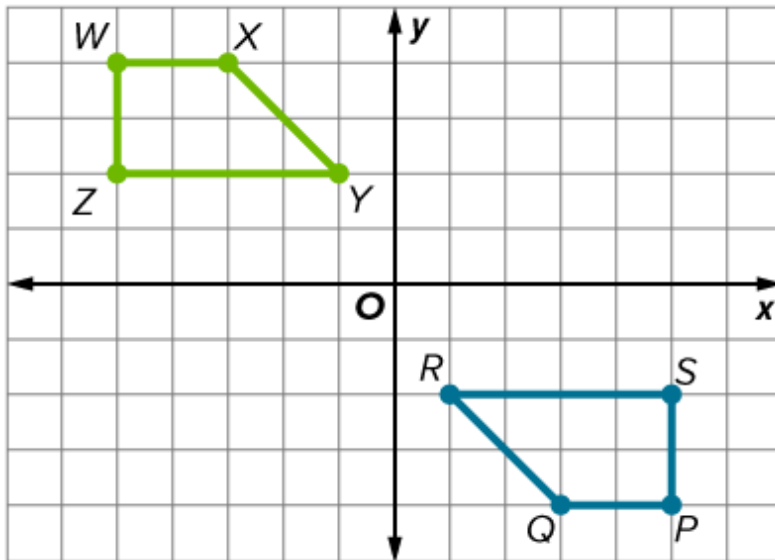
20) A cone is cut from a cube. What is the volume of the figure to the nearest tenth?



_____ cm^3

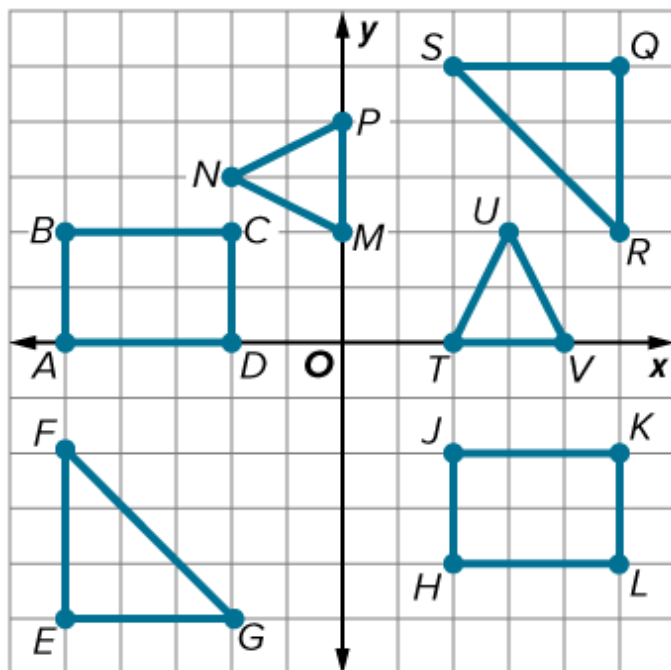
Grade 8 Term 3 - M9

- 1) Describe a congruence transformation that maps quadrilateral $PQRS$ onto quadrilateral $WXYZ$.



Grade 8 Term 3 - M9

2) Which pair of figures are congruent after a 180° rotation about the origin?

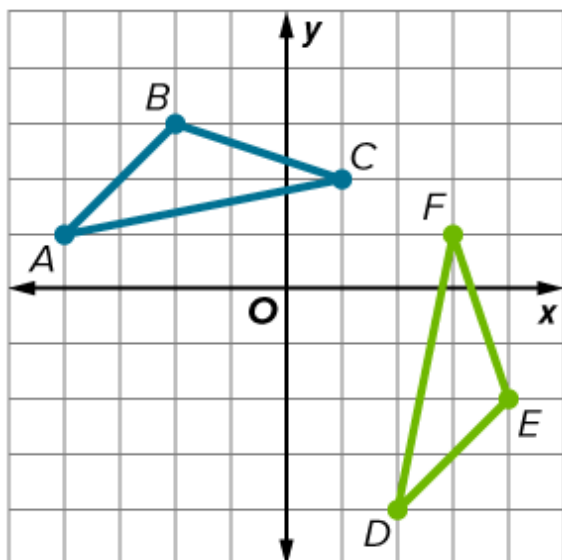


- ☐ A) triangle EFG and triangle QRS
- ☐ B) triangle MNP and triangle TUV
- ☐ C) triangle EFG and triangle UTV
- ☐ D) rectangle $HJKL$ and rectangle $ABCD$

Grade 8 Term 3 - M9

3) Fill in the blanks using the available answer choices.

Triangle ABC is congruent to triangle DEF . Complete the statement about the congruence transformation that maps triangle ABC to triangle DEF .



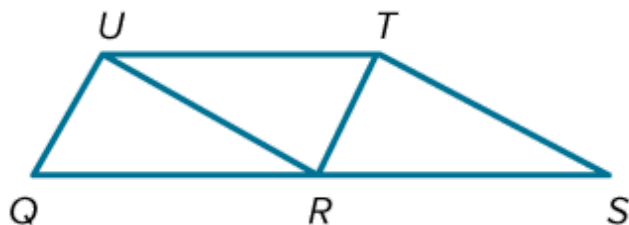
A reflection across the line $y = x$, followed by a translation _____ unit(s).
(Blank 1)

Blank 1 options

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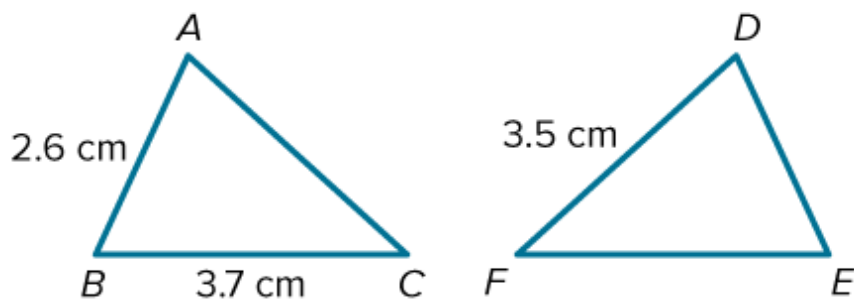
Grade 8 Term 3 - M9

- 5) In the figure, $\triangle QRU \cong \triangle RST \cong \triangle TUR$.



Travis claims that line segment QS is twice as long as line segment QR . Is Travis correct? Explain your reasoning.

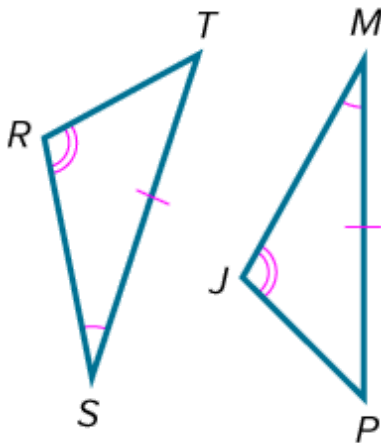
- 6) In the diagram, $\triangle ABC \cong \triangle DEF$. Find the perimeter of triangle ABC .



_____ cm

Grade 8 Term 3 - M9

7) In the figure shown, $\triangle RST \cong \triangle JMP$.

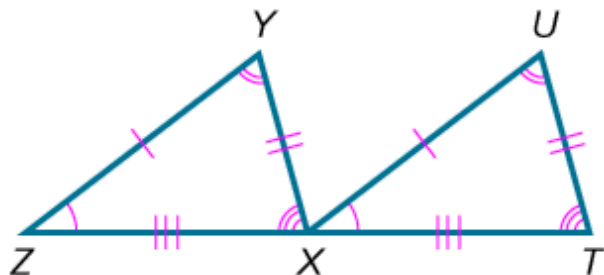


Indicate whether each of the following statements is correct regarding the congruency of these triangles.

	Correct	Incorrect
$\overline{RT} \cong \overline{JM}$	☐	☐
$\overline{ST} \cong \overline{MP}$	☐	☐
$\overline{JM} \cong \overline{RS}$	☐	☐
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Grade 8 Term 3 - M9

- 8) The following triangles represent rafters in a building. If $m\angle Z = 55^\circ$ and $m\angle U = 65^\circ$, what is the measure of $\angle YXZ$?



_____°

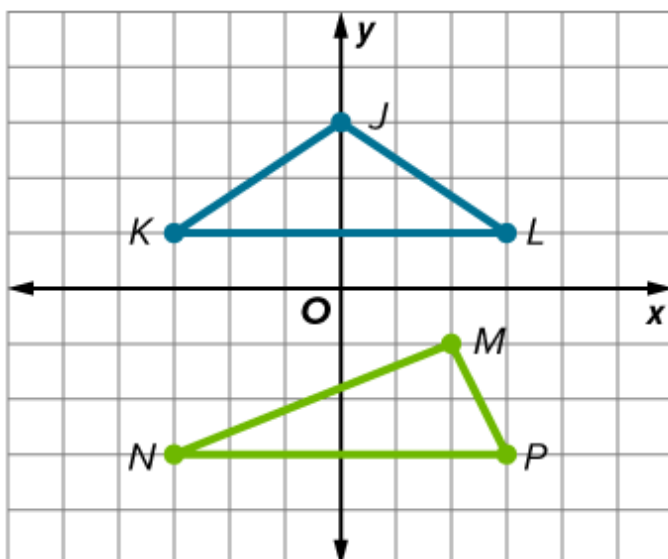
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Grade 8 Term 3 - M9

10A) Fill in the blanks using the available answer choices.

Consider the following triangles.



Are the triangles similar? _____
(Blank 1)

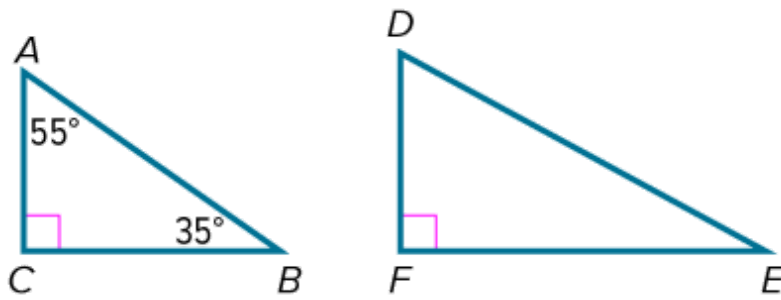
Blank 1 options

- yes
- no

10B) If the triangles are similar, describe the sequence of transformations that maps triangle JKL onto MNP . If the triangles are not similar, explain why they are not similar.

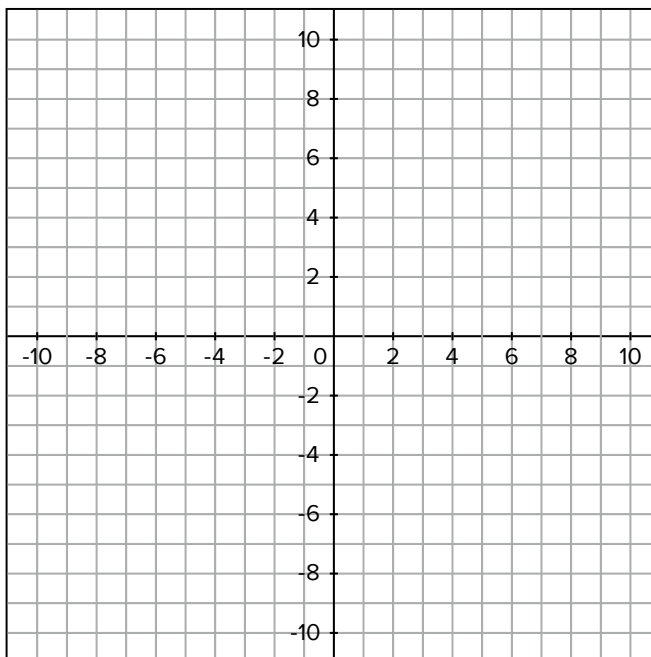
Grade 8 Term 3 - M9

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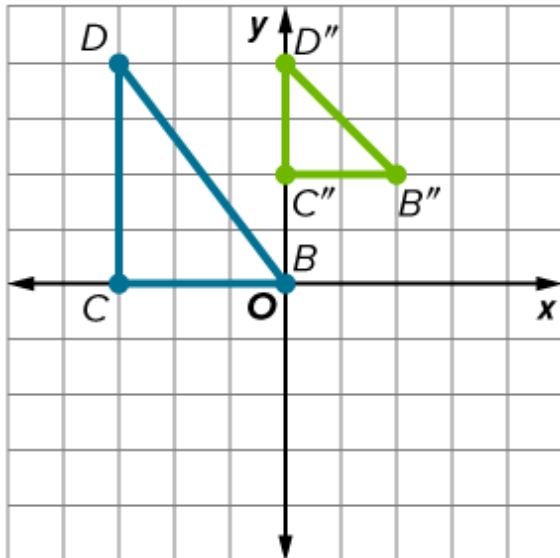
_____ $^\circ$

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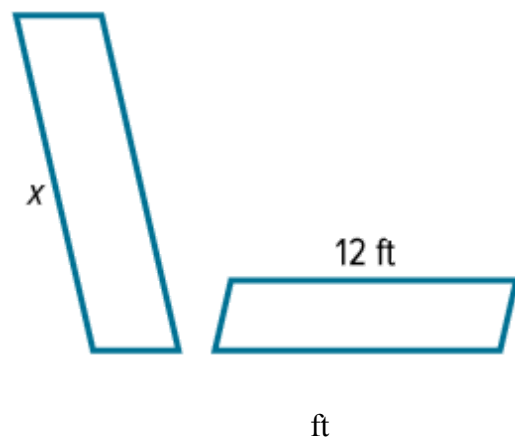


Grade 8 Term 3 - M9

- 13)** Consider the two triangles. If the triangles are similar, describe a sequence of transformations that maps one figure onto the other. If the triangles are not similar, explain why they are not similar.

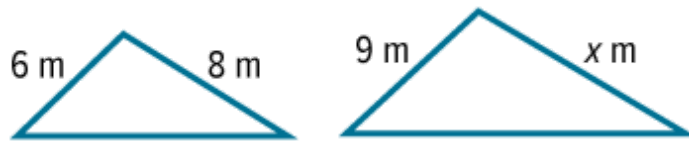


- 14)** The following quadrilaterals are similar. If the ratio of the perimeter of the left quadrilateral to the perimeter of the right quadrilateral is 4:3, find the value of x .



Grade 8 Term 3 - M9

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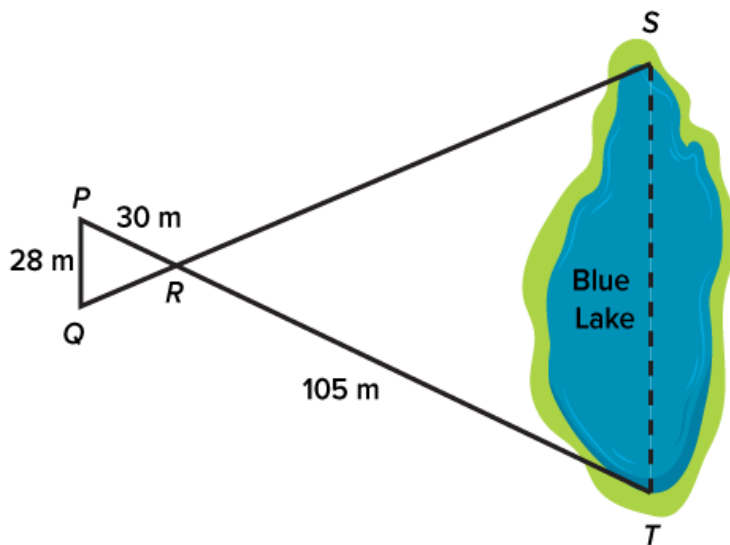


$x =$ _____ m

- 16)** Bonnie wants to reduce the size of a poster. The original dimensions of the poster are 12 inches by 15 inches. Which of the following could be the size of the poster after the reduction?

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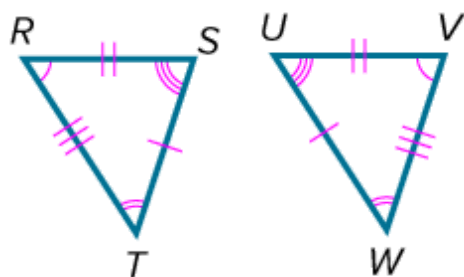
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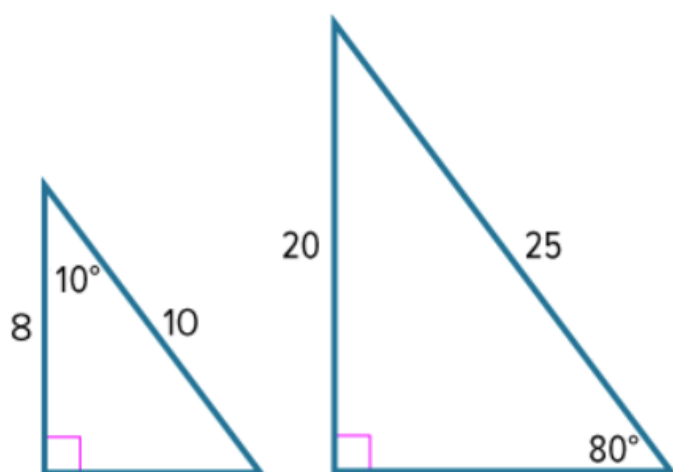
Grade 8 Term 3 - M9

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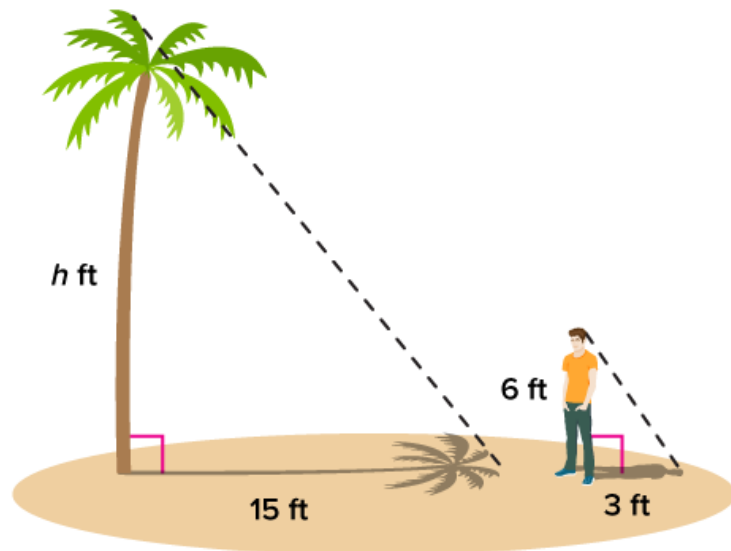
19) Complete the similarity ratio for the similar triangles.



$$\frac{8}{10} = \underline{\hspace{2cm}}$$

Grade 8 Term 3 - M9

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_____ ft