

Geometry Quarter Exam

Name: _____

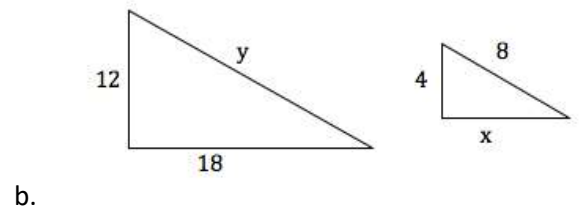
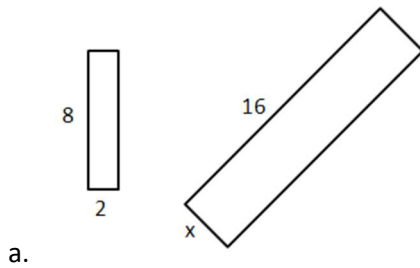
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Answer the questions below. Make sure to show your work and provide complete geometric explanations for full credit.

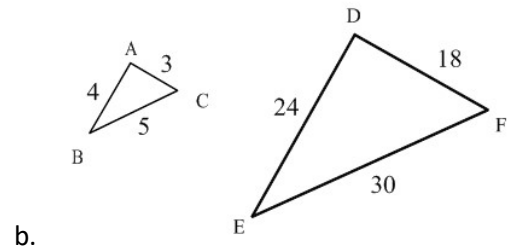
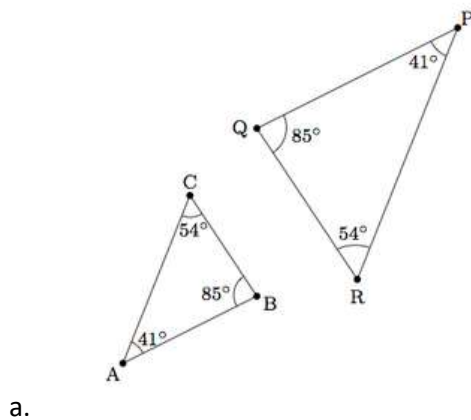
1. Solve the proportion. Show your work.

$$\frac{3}{x+1} = \frac{5}{11}$$

2. The figures in each pair are similar. Find the value of each variable. Show your work.



3. Determine whether the triangles are similar. If so, write a similarity statement and name the postulate or the theorem you used. If not, explain.



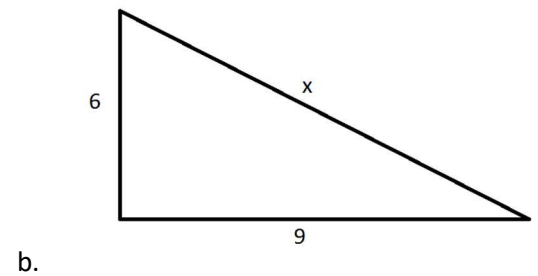
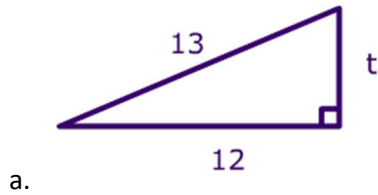
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4. Find the value of each variable for the right triangles. Make sure all answers are in reduced radical form. Show your work.

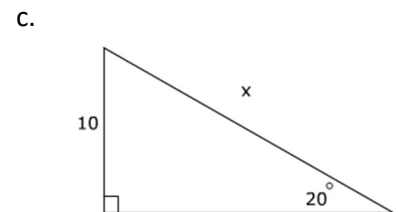
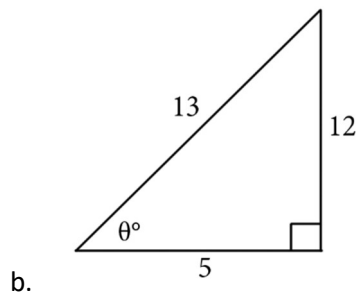
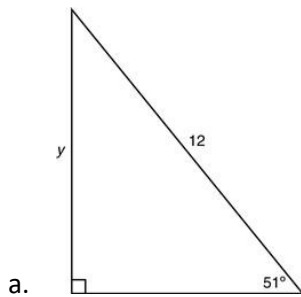


5. Given the following triangle side lengths, identify the triangle as acute, right or obtuse. Show your work.

a. 5 in, 6 in, 7 in

b. 18 in, 9 in, 12 in

6. Find the missing value. Show your work. Round to the nearest hundredth.



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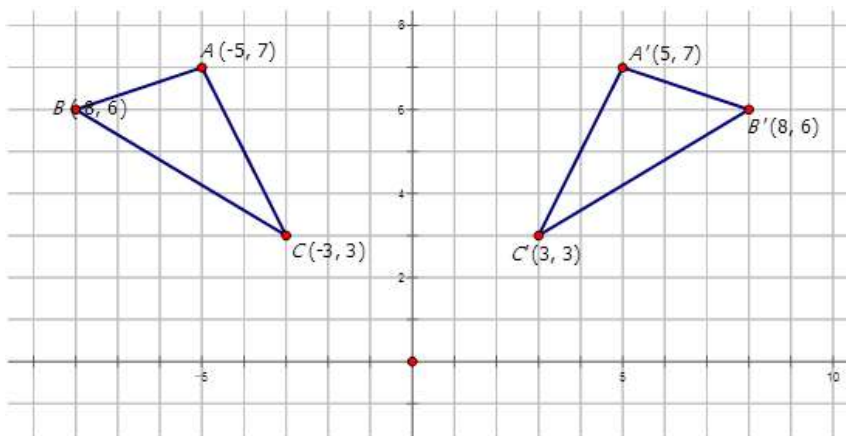
7. Given the vertices of $\triangle ABC$ are $A(2, -5)$, $B(-4, 6)$ and $C(3, 1)$, find the vertices following each of the transformations FROM THE ORIGINAL vertices:

a. $R_x = 3$

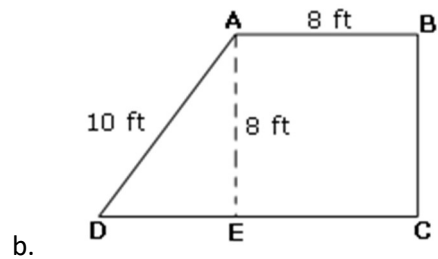
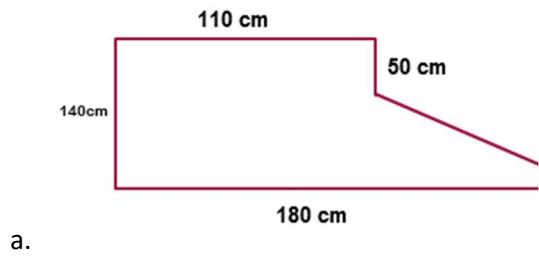
b. $T_{\langle 3, -6 \rangle}$

c. $r_{(90^\circ, o)}$

8. Find the congruence transformation that maps $\triangle ABC$ to $\triangle A'B'C'$. Explain.



9. Find the area of each figure to the nearest tenth.



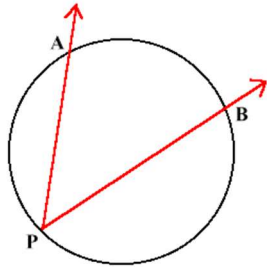
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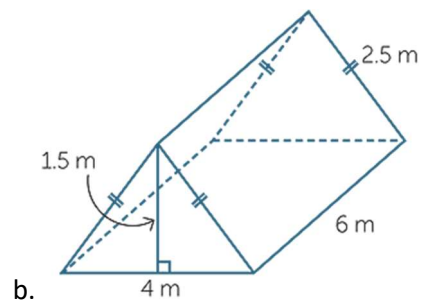
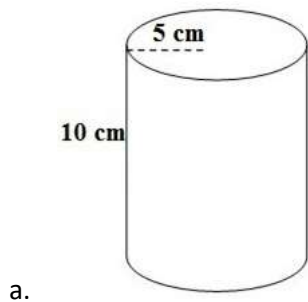
Answer the questions below. Make sure to show your work and provide complete geometric explanations for full credit.

10. Find the measure of both arc AB and arc APB, where $\angle APB = 108^\circ$. Please be sure to show your steps.



11. Find the area of a regular Octagon with side lengths 5in. Round your answer to the nearest tenth.

12. Find the surface area of each figure to the nearest tenth.



- b. What is a real-world example or use of surface area?

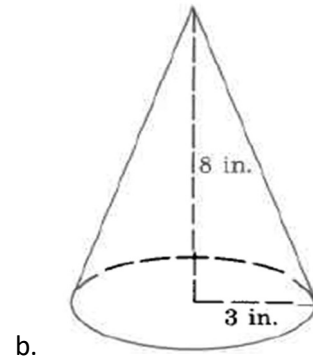
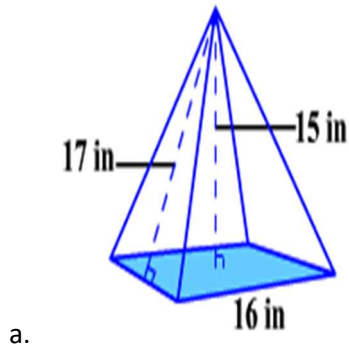
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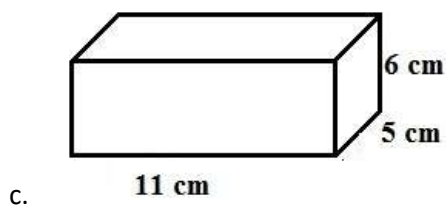
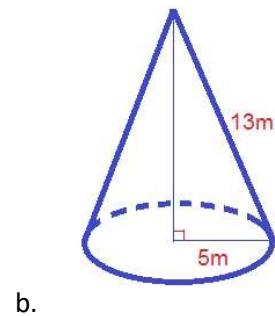
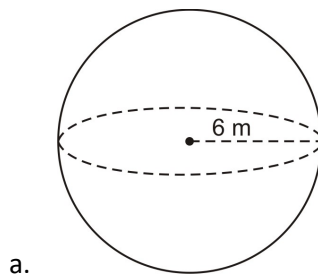
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13. Find the surface area of each figure to the nearest tenth.



14. Find the volume of each figure to the nearest tenth.



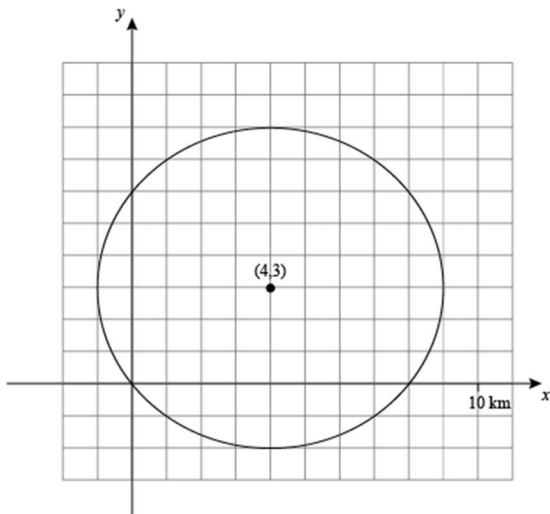
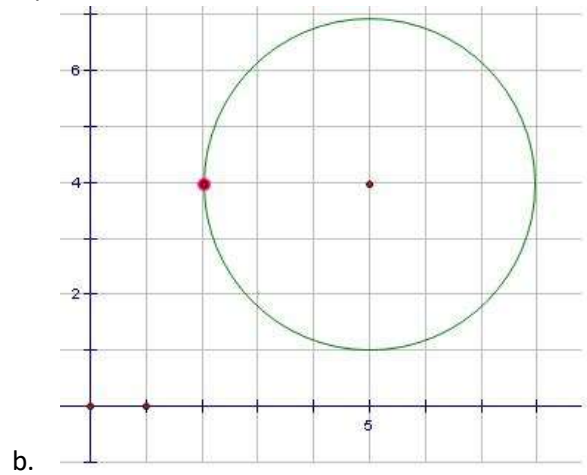
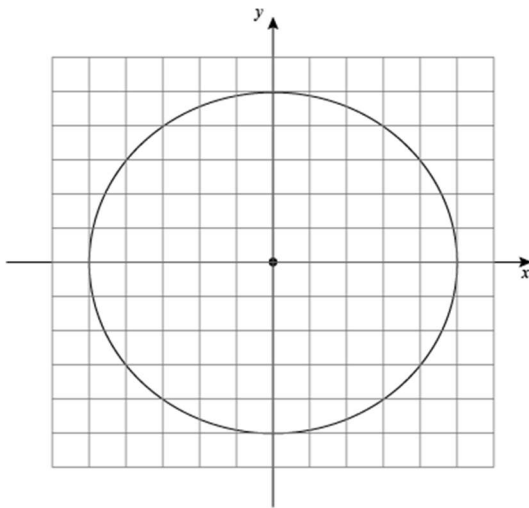
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15. Find the center and radius, then write the standard equation of each circle



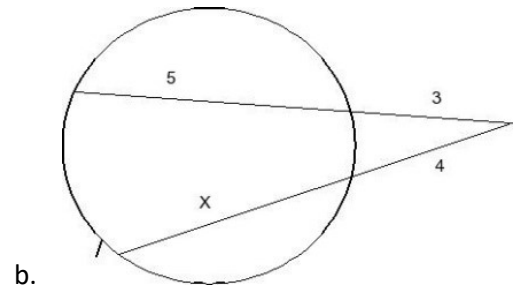
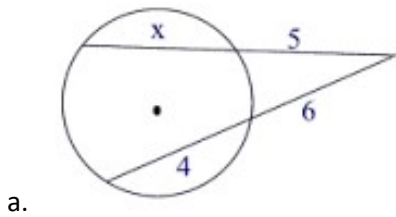
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16. Solve for x



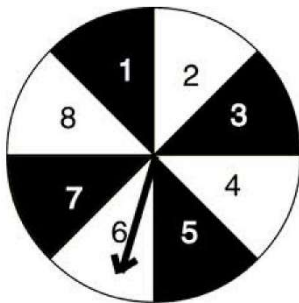
17. Evaluate

a. $6!$

b. ${}_8P_5$

c. ${}_{12}C_4$

18. Use the spinner to find each theoretical probability



- a. $P(\text{a number no more than 5})$
- b. $P(\text{an even number})$
- c. $P(\text{a number less than 3})$

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Answer the questions below. Make sure to show your work and provide complete geometric explanations for full credit.

19. You roll two standard number cubes. What is the probability that the sum is odd, given that one of the number cubes shows a 4?

20. What is the area of the figure:

