

Geometry Quarter Exam

Name: _____

Student Number: _____

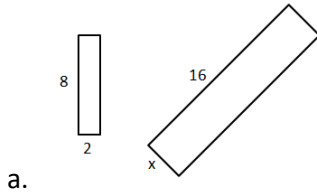
Answer the questions below. Make sure to show your work and provide complete geometric explanations for full credit.

1. Solve each proportion. Show your work.

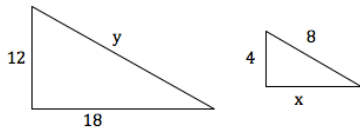
a. $\frac{2x}{7} = \frac{12}{14}$

b. $\frac{3}{x-1} = \frac{5}{7}$

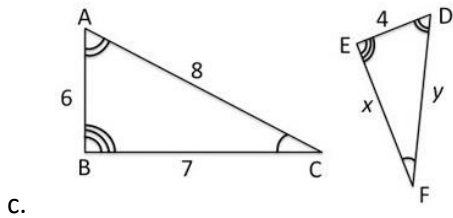
2. The figures in each pair are similar. Find the value of each variable. Show your work.



a.



b.



c.

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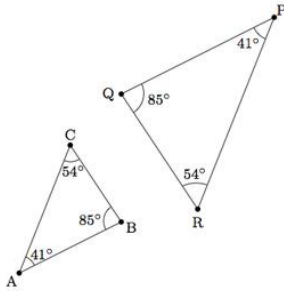
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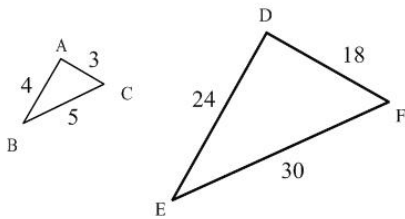
Answer the questions below. Make sure to show your work and provide complete geometric explanations for full credit.

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.

a.



b.



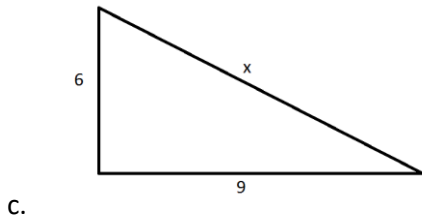
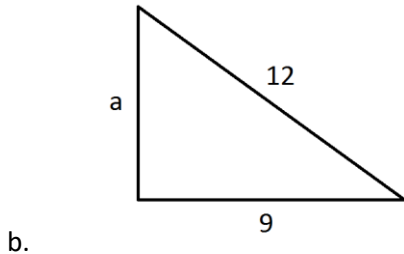
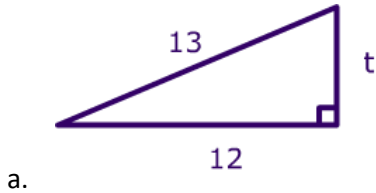
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4. Find the value of each variable for the right triangles. Make sure all answers are in reduced radical form. Show your work.



5. Given the following triangle side lengths, identify the triangle as acute, right or obtuse. Show your work.
- 3in, 4in, 5 in
 - 5in, 6in, 7in
 - 8in, 9in, 12in

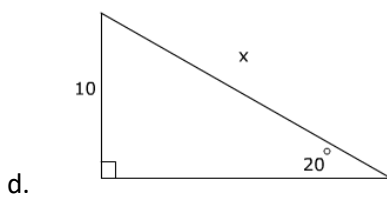
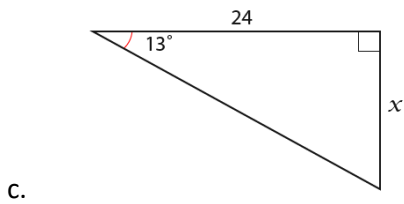
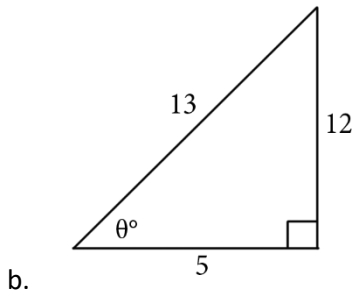
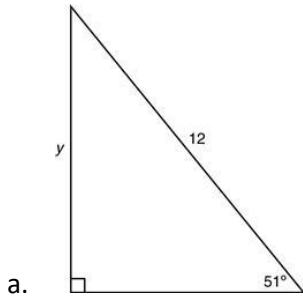
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6. Find the missing value. Show your work.



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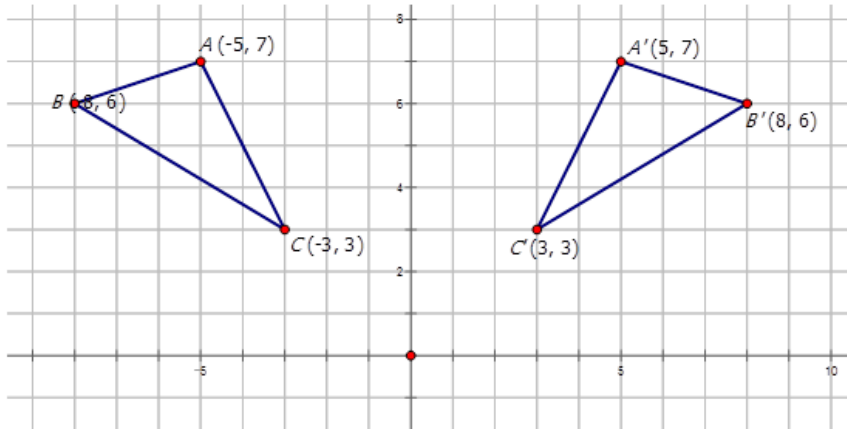
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7. Given the vertices of $\triangle ABC$ are A (2,5), B (4,6) and C (3,1), find the vertices following each of the transformations FROM THE ORIGINAL vertices:
- $R_{x\text{-axis}}$
 - $R_{y=3}$
 - $T_{\langle -2, 5 \rangle}$
 - $T_{\langle 3, -6 \rangle}$
 - $r_{(90^\circ, 0)}$

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



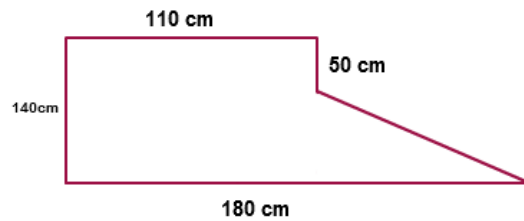
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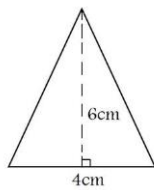
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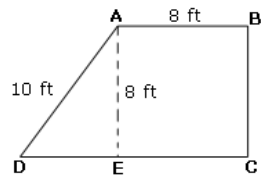
9. Find the area of each figure to the nearest tenth. Show your work



a.



b.



c.

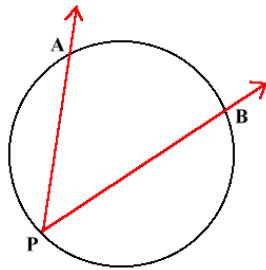
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10. Find the measure of each arc AB. Please make sure to show your steps.

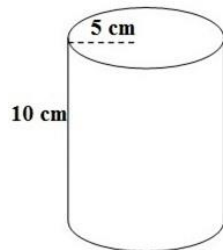


, Where $\angle APB = 108^\circ$

11. Find the area of each regular polygon. Round your answer to the nearest tenth. Show your work.

- a. Octagon with side lengths 5in.
- b. Hexagon with radius 5in

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



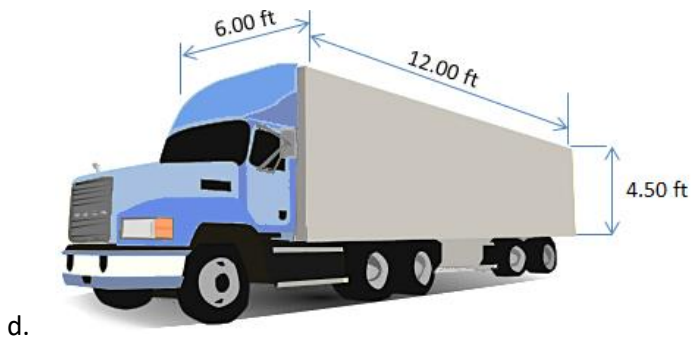
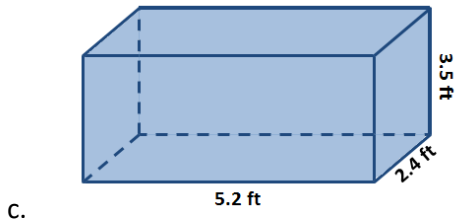
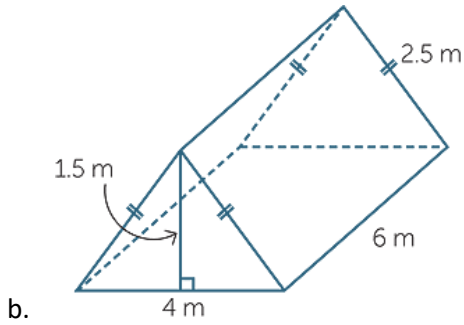
a.

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

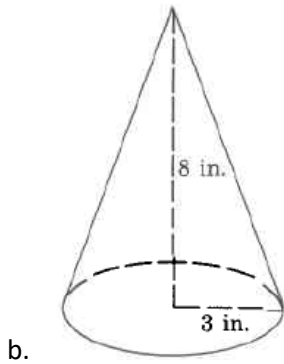
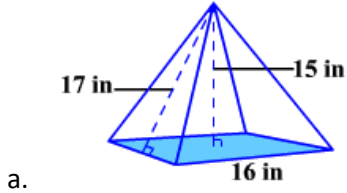
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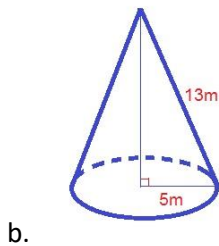
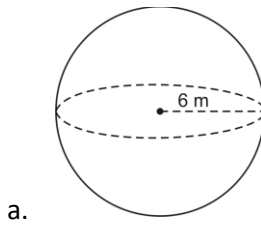
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Answer the questions below. Make sure to show your work and provide complete geometric explanations for full credit.

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



14. Find the volume of each figure to the nearest tenth. Show your work.

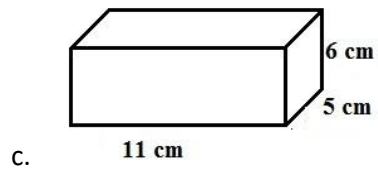


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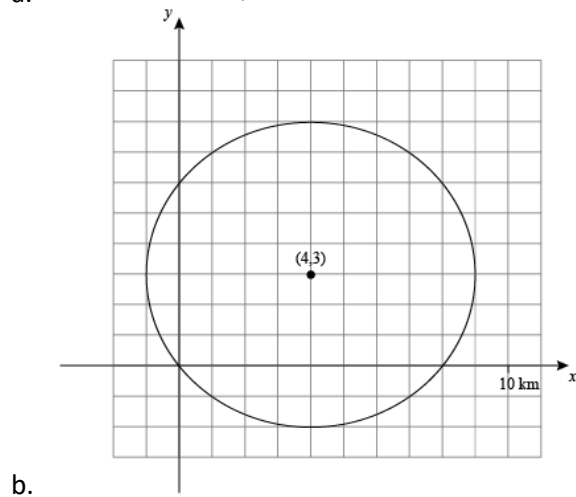
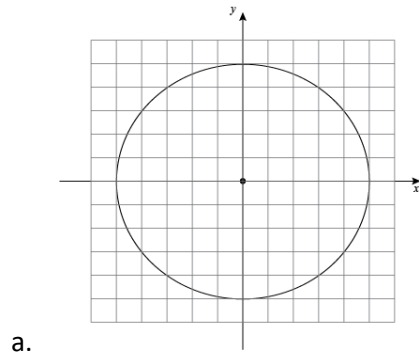
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15. Write the standard equation of each circle

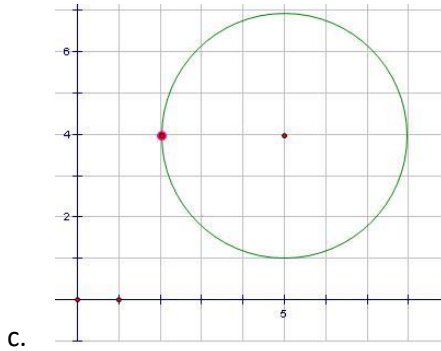


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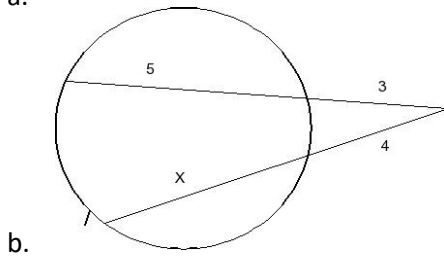
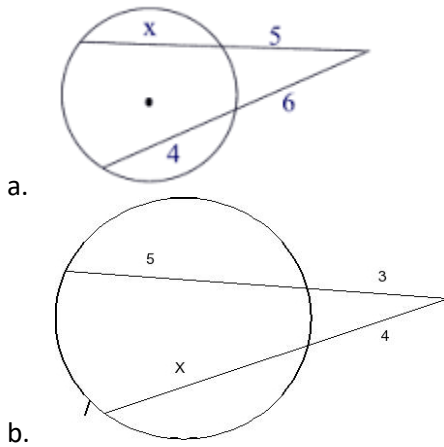
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Answer the questions below. Make sure to show your work and provide complete geometric explanations for full credit.



16. Solve for x . Show your work.



17. Evaluate. Show your work.

a. $6!$

b. ${}_6P_5$

c. ${}_{12}C_3$

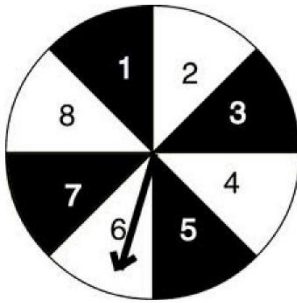
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Answer the questions below. Make sure to show your work and provide complete geometric explanations for full credit.

18. Use the spinner to find each theoretical probability



- P (an even number)
- P (a number greater than 3)
- P (an odd number)

19. You roll two standard number cubes. What is the probability that the sum is odd, given than one of the number cubes shows a 1? Show your work.

20. What is the area of the figure. Show your work.

