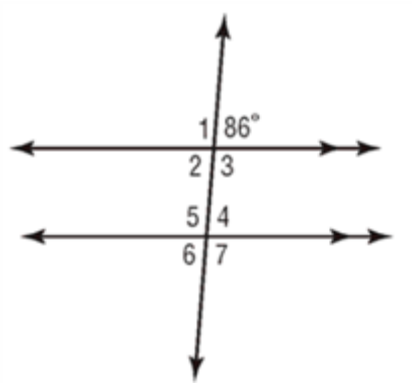
Indicate the answer choice that best completes the statement or answers the question.

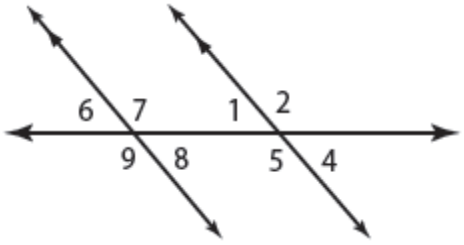
1. Use the figure.



Determine the measure of ∠2. Explain your reasoning.

a. 86°; ∠2 & the given angle are vertical angles. So, $m\angle 2 = 86°$.
b. 86°; ∠2 & the given angle are corresponding angles. So, $m\angle 2 = 86°$.
c. 86°; ∠2 and the given angle are alternate interior angles. So, $m\angle 2 = 86°$.
d. 94°; ∠2 is supplementary to the given angle. So, $m\angle 2$ 180° – 86° = 94°.

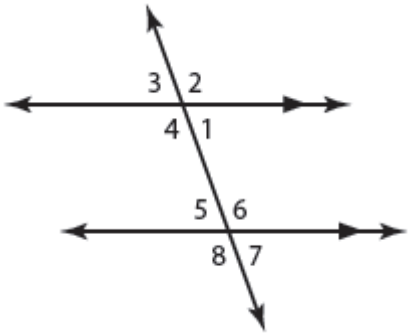
2. Use the figure.



What is $m\angle 8$ if $m\angle 4 = 50°$?

a. 40°
b. 50°
c. 70°
d. 180

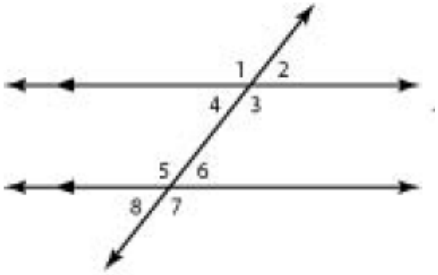
3. Use the figure.



If $m\angle 8 = 120°$, what is $m\angle 2$?

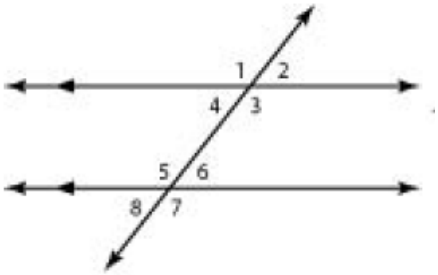
a. 45°
b. 60°
c. 120°
d. 135°

4. In the figure shown, identify one pair of angles that are congruent.



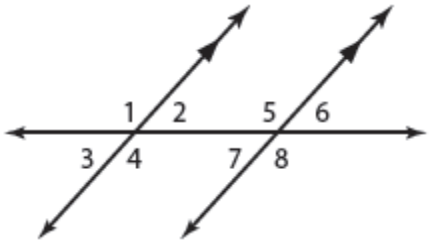
a. $\angle 1$ and $\angle 6$
b. $\angle 2$ and $\angle 6$
c. $\angle 2$ and $\angle 3$
d. $\angle 3$ and $\angle 6$

5. In the figure shown, identify one pair of angles that are ***not*** congruent.



a. $\angle 1$ and $\angle 7$
b. $\angle 3$ and $\angle 5$
c. $\angle 4$ and $\angle 6$
d. $\angle 2$ and $\angle 5$

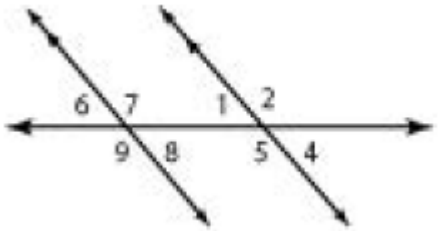
6. Use the figure below.



Find $m\angle 4$ if $m\angle 1 = 100°$.

a. 50°
b. 80°
c. 100°
d. 200°

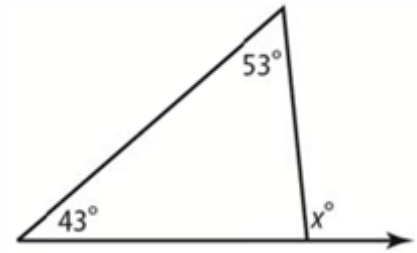
7. Use the figure.



If $m\angle 7 = 130°$, what is $m\angle 5$.

a. 120°
b. 130°
c. 150°
d. 180°

8. Determine the value of x in the triangle shown below.

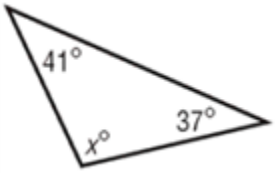


a. 53°
b. 84°
c. 90°
d. 96°

9. The measure of the angles of $\triangle RST$ are in the ratio 1:3:5. What are the measures of the angles?

a. 20°, 40°, 90°
b. 40°, 60°, 80°
c. 20°, 60°, 100°
d. 20°, 60°, 120°

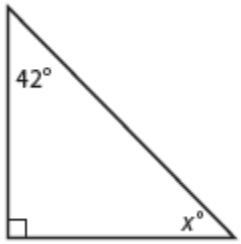
10. Determine the value of x in the triangle shown below.



a. 78°
b. 102°
c. 108°
d. 112°

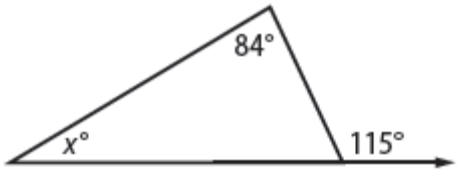
11. Determine the value of x in the triangle shown below.

a. 40°
b. 42°
c. 45°
d. 48°



12. Determine the value of x in the triangle shown below.

a. 31°
b. 46°
c. 65°
d. 96°



13. What is the third angle of a right triangle if one of the angles measures 51°?

a. 39°
b. 51°
c. 78°
d. 129°

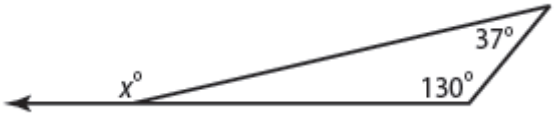
14. Determine the missing measure of the triangle with the given angle measures.

45°, 35°, x°

a. 80°
b. 90°
c. 100°
d. 110°

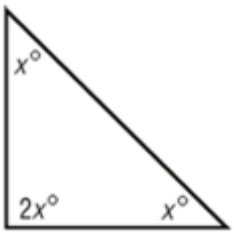
15. Determine the value of x in the triangle shown below.

a. 13°
b. 37°
c. 130°
d. 167°



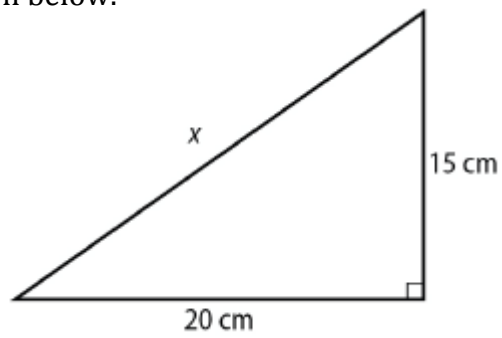
16. Determine the value of x in the triangle shown below.

a. 30°
b. 45°
c. 60°
d. 90°



17. Determine the perimeter of the triangle shown below.

a. 35 cm
b. 55 cm
c. 60 cm
d. 75 cm



18. The hypotenuse of a right triangle is 15 inches, and one of its legs is 11 inches. Find the length of the other leg.

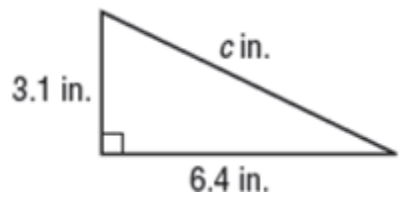
a. ≈ 8.4 in.
b. ≈ 9.1 in.
c. ≈ 10.2 in.
d. ≈ 18.6 in.

19. State three measures that could be the side lengths of a right triangle. Justify your answer.

a. 3, 4, 7; $3^2 + 4^2 = 7^2$
b. 6, 8, 12; $6^2 + 8^2 = 12^2$
c. 9, 40, 41; $9^2 + 40^2 = 41^2$
d. 12, 12, 15; $12^2 + 12^2 = 15^2$

20. Write an equation you could use to find the length of the missing side of the triangle. Then find the missing length. Round to the nearest tenth if necessary.

a. 3.1 + 6.4 = c; 9.5 in.
b. $3.1^2 + 6.4^2 = c^2$; 7 in.
c. $3.1^2 + 6.4^2 = c^2$; 7.1 in.
d. $3.1^2 + 6.4^2 = c^2$; 50.6 in.



21. The measures of three sides of a triangle are 6 centimeters, 8 centimeters and 10 centimeters. Determine whether the triangle is a right triangle. Justify your answer.

    a. yes; $6 + 8 > 10$
    b. yes; $6^2 + 8^2 = 10^2$
    c. no; $6 + 8 = 14$
    d. no; $6^2 + 8^2 \neq 10^2$

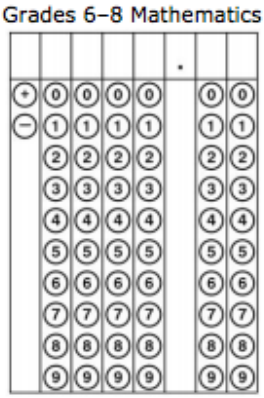
22. State three measures that could be the side measures of a right triangle. Justify your answer.

    a. 1, 2, 3; $1^2 + 2^2 = 3^2$
    b. 5, 12, 13; $5^2 + 12^2 = 13^2$
    c. 6, 9, 14; $6^2 + 9^2 = 14^2$
    d. 10, 11, 16; $10^2 + 11^2 = 16^2$

23. The diagonal of a television measures 27 inches. If the width is 22 inches, calculate its height to the nearest inch.

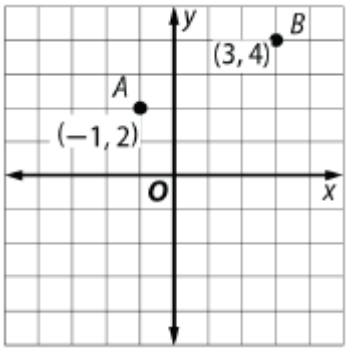
    a. 16 in.
    b. 20 in.
    c. 25 in.
    d. 35 in.

24. Elaina's pool is in the shape of a rectangle. Its dimensions are 95 feet by 55 feet. Find the length in feet of the diagonal of the pool. Round your answer to the nearest tenth if necessary.



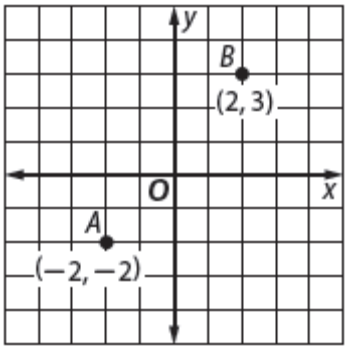
25. Determine the distance between points *A* and *B* in each graph. Round to the nearest tenth if necessary.

    a. 5.3 units
    b. 4.7 units
    c. 5.1 units
    d. 4.5 units



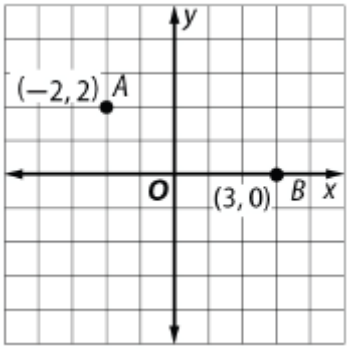
26. Determine the distance between points A and B in each graph. Round to the nearest tenth if necessary.

a. 6.2 units
b. 6.4 units
c. 6.7 units
d. 7.1 units



27. Determine the distance between points A and B in each graph. Round to the nearest tenth if necessary.

a. 4.6 units
b. 4.8 units
c. 5.2 units
d. 5.4 units



Bonus

What is the perimeter, in centimeters, of a rectangle with diagonal length 13 centimeters and width 12 centimeters?