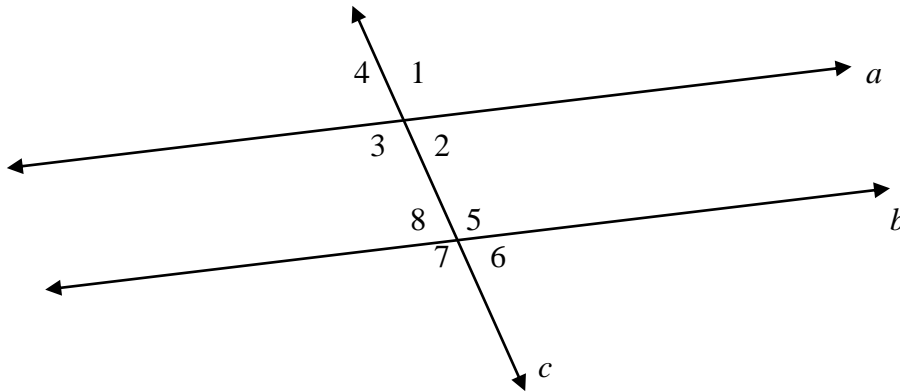


Given the following picture, with $\vec{a} \parallel \vec{b}$, and \vec{c} is a transversal:



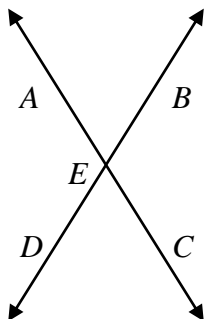
Identify the following pairs of angles:

- | | |
|----------------------------------|----------------------------------|
| 1. $\angle 3$ & $\angle 5$ _____ | 2. $\angle 5$ & $\angle 7$ _____ |
| 3. $\angle 4$ & $\angle 8$ _____ | 4. $\angle 4$ & $\angle 6$ _____ |
| 5. $\angle 2$ & $\angle 5$ _____ | 6. $\angle 8$ & $\angle 5$ _____ |

Using the same picture as above, given $m\angle 2 = 70^\circ$, find:

- | | | | |
|----------------|-----------------|-----------------|-----------------|
| 5. $m\angle 2$ | 6. $m\angle 6$ | 7. $m\angle 5$ | 8. $m\angle 7$ |
| 9. $m\angle 1$ | 10. $m\angle 4$ | 11. $m\angle 3$ | 12. $m\angle 8$ |

Using the following picture, name the 3 pairs of congruent angles.

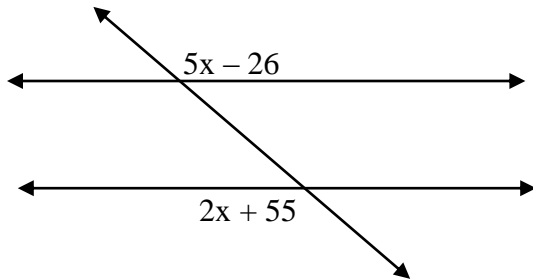


- | | | | |
|-------------|-------|---------|-------|
| 13. Pair 1: | _____ | \cong | _____ |
| 14. Pair 2: | _____ | \cong | _____ |
| 15. Pair 3: | _____ | \cong | _____ |

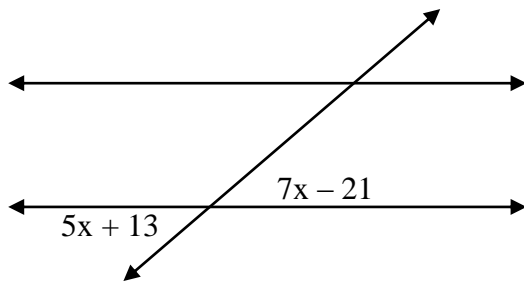
Directions for problems 16 – 17.

- Name each pair of labeled angles.
- State the relationship between the angles.
- Solve for x by making an equation and solving algebraically.
- Find the measure of each angle.

16.



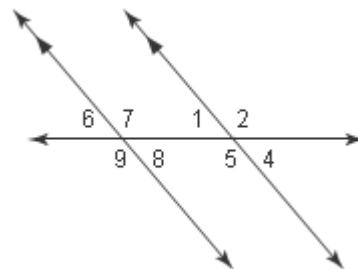
17.



For Exercises 18 and 19, use the figure at the right.

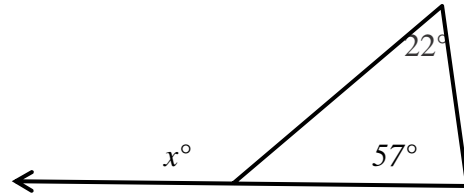
18. What is $m\angle 6$ if $m\angle 5 = 120^\circ$?

19. If $m\angle 7 = 115^\circ$, what is $m\angle 1$?



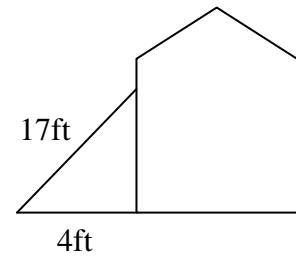
20. A triangle has angles measuring 37° and 24° . What is the measure of the triangle's third angle?

21. What is the value of x in the triangle at the right?



22. One leg of a right triangle is 4.5 centimeters long. The length of the second leg is 7.2 centimeters. What is the length of the hypotenuse? Round to the nearest tenth if necessary.

23. How far up on the house is the ladder resting? Round to the nearest tenth if necessary.



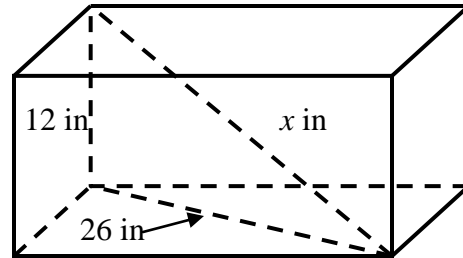
24. What is the distance between points $A(-9, 7)$ and $B(2, -6)$? Round to the nearest tenth if necessary.

25. Could the following measurements 9 ft, 14 ft, 11 ft be the side measures of a right triangle?

26. What is the measure of an exterior angle of a regular decagon?

27. What is the sum of the interior angles of a regular nonagon?

28. Willa wants to mail a frame in the box shown at the right. Find the length of the diagonal of the box. Round to the nearest tenth if necessary.



29. Find the value of x .

