

Next, we know from the definitions of the six basic trigonometric that tangent and cotangent are the two functions that use the adjacent leg and the opposite, so we will use one of these to find the missing value.

Using the figure, we can determine the following.

$$\tan(77^\circ) = \frac{opp}{33},$$

$$opp = 33 \tan(77^\circ) \approx 143 \text{ feet}$$

7.R.1 Exercises

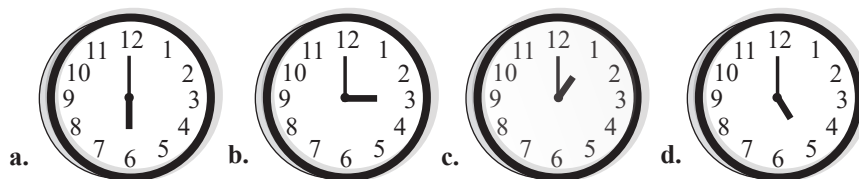
Concept Check

True/False. Determine whether each statement is true or false. If a statement is false, explain how it can be changed so the statement will be true. (**Note:** There may be more than one acceptable change.)

1. The sum of the measures of two complementary angles is equal to the measure of one right angle.
2. The sum of the measures of complementary angles is greater than the sum of the measures of supplementary angles.
3. Adjacent angles are two angles that share a side.
4. If two lines in a plane are not parallel, then they are perpendicular.

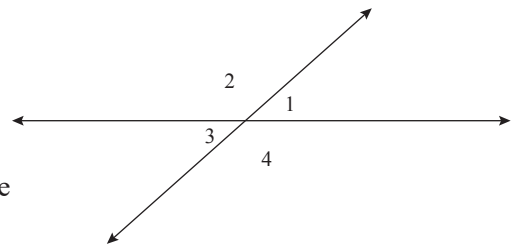
Practice

5. Name the type of angle formed by the hands on a clock.



- a. at six o'clock
- b. at three o'clock

- c. at one o'clock
- d. at five o'clock
6. Assume that $\angle 1$ and $\angle 2$ are complementary.
- If $m\angle 1 = 15^\circ$, what is $m\angle 2$?
 - If $m\angle 1 = 3^\circ$, what is $m\angle 2$?
 - If $m\angle 1 = 45^\circ$, what is $m\angle 2$?
 - If $m\angle 1 = 75^\circ$, what is $m\angle 2$?
7. The figure shows two intersecting lines.
- If $m\angle 1 = 30^\circ$, what is $m\angle 2$?
 - Is $m\angle 3 = 30^\circ$? Give a reason for your answer other than the fact that $\angle 1$ and $\angle 3$ are vertical angles.
 - Name two pairs of congruent angles.
 - Name four pairs of adjacent angles.



Writing & Thinking

8. Explain, in your own words, the relationships between vertex, ray, angle, and line.