

# Practice 14-5

## The Law of Cosines

Use the Law of Cosines. Find the measure of the indicated part of each triangle. Round answers to the nearest tenth.

1. Find  $x$  if  $y = 4$ ,  $z = 9$ , and  $m\angle X = 16^\circ$ .
2. Find  $y$  if  $x = 8$ ,  $z = 5$ , and  $m\angle Y = 8^\circ$ .
3. Find  $m\angle Y$  if  $x = 17.2$ ,  $y = 22.1$ , and  $z = 31.3$ .
4. Find  $z$  if  $x = 32$ ,  $y = 25$ , and  $m\angle Z = 21^\circ$ .
5. Find  $m\angle Y$  if  $x = 14$ ,  $y = 6$ , and  $z = 10$ .
6. Find  $m\angle X$  if  $x = 24.9$ ,  $y = 32.0$ , and  $z = 42.3$ .
7. Find  $x$  if  $y = 16$ ,  $z = 4$ , and  $m\angle X = 123^\circ$ .
8. Find  $m\angle Z$  if  $x = 6.2$ ,  $y = 5.9$ , and  $z = 3.4$ .
9. Find  $z$  if  $x = 321$ ,  $y = 543$ , and  $m\angle Z = 54^\circ$ .
10. Find  $m\angle Z$  if  $x = 235$ ,  $y = 154$ , and  $z = 239$ .
11. Find  $x$  if  $y = 10$ ,  $z = 12$ , and  $m\angle X = 29^\circ$ .
12. Find  $y$  if  $x = 3$ ,  $z = 6$ , and  $m\angle Y = 15^\circ$ .
13. Find  $x$  if  $y = 8$ ,  $z = 7$ , and  $m\angle X = 149^\circ$ .
14. Find  $z$  if  $x = 7$ ,  $y = 22$ , and  $m\angle Z = 12^\circ$ .
15. Find  $z$  if  $x = 46$ ,  $y = 67$ , and  $m\angle Z = 85^\circ$ .
16. Find  $m\angle X$  if  $x = 4$ ,  $y = 7$ , and  $z = 10$ .
17. Find  $m\angle Y$  if  $x = 32$ ,  $y = 79$ , and  $z = 86$ .
18. Find  $m\angle Z$  if  $x = 3$ ,  $y = 2.9$ , and  $z = 4.6$ .
19. Find  $m\angle Y$  if  $x = 34.7$ ,  $y = 18.9$ , and  $z = 21.5$ .
20. Find  $m\angle Z$  if  $x = 14$ ,  $y = 16$ , and  $z = 18$ .
21. The sides of a triangular lot are 158 ft, 173 ft, and 191 ft. Find the measure of the angle opposite the longest side to the nearest tenth of a degree.
22. A car travels 50 miles due west from point  $A$ . At point  $B$ , the car turns and travels at an angle of  $35^\circ$  north of due east. The car travels in this direction for 40 miles, to point  $C$ . How far is point  $C$  from point  $A$ ?

All rights reserved.

© Pearson Education, Inc., publishing as Pearson Prentice Hall.