11.5 Law of Cosines and Sines Name _____

Write which formula you would use to find the indicated missing measure, the law of sines or the law of cosines.

1. $m\angle C = 115°$, $a = 11$, $b = 21$; find c

2. $m\angle B = 72°$, $m\angle C = 31°$, $a = 103$; find b

3 $m\angle A = 35°$, $m\angle B = 56°$, $a = 51$; find c

4. $m\angle A = 34°$, $b = 24$, $c = 46$; find a

5. $m\angle A = 29°$, $a = 15$, $b = 19$; find c

6. $a = 12$, $b = 16$, $c = 19$; $m\angle A$

7. $m\angle A = 67^0$, $a = 18$, $b = 20$, find c

8. $a = 21$, $b = 42$, $c = 31$; $m\angle B$

9. $a = 12$, $b = 12$, $c = 17$; $m\angle C$

10. $m\angle A = 48°$, $m\angle B = 38°$, $b = 49$; find c

Solve each ΔPQR. Round lengths to the nearest tenth, and angles to the nearest degree.

11. $m\angle R = 30°$, $p = 18$, $q = 16$

12. $p = 18$, $m\angle Q = 46°$, $m\angle R = 39°$

13. $p = 310$, $q = 250$, $r = 160$

14. $m\angle Q = 113°$, $p = 27$, $r = 43$

15. $p = 15$, $q = 19$, $r = 43$

16. $m\angle A = 32°$, $a = 7$, $b = 10$

Solve the following word problems.

17. A triangular field is 452 ft on one side, and 572 ft on another. The sides meet in an angle of 67.1°. Find the length of the third side to the nearest foot.

18. If a triangular parcel of land has sides of lengths 541 ft, 429 ft, and 395 ft, what are the measures of the angles between the sides, to the nearest tenth of a degree?