The Law of Cosines

Find each measurement indicated. Round your answers to the nearest tenth.

1) Find RT

2) Find YZ

3) Find DE

4) Find ST

5) Find $m\angle A$

6) Find $m\angle S$

7) Find $m\angle R$

8) Find $m\angle H$

9) Find $m\angle E$

10) Find $m\angle A$

Solve each triangle. Round your answers to the nearest tenth.

11) 

12) 

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13) \[ \triangle PQR, \angle P = 127^\circ, \; P = 16, \; Q = 7 \]

14) \[ \triangle EFD, \angle E = 78^\circ, \; E = 23, \; D = 7 \]

15) In \( \triangle STR \), \( m \angle S = 117.8^\circ \), \( r = 20.4 \), \( t = 22.1 \)

16) In \( \triangle RPO \), \( q = 11 \), \( p = 22 \), \( m \angle R = 96^\circ \)

17) In \( \triangle RST \), \( s = 13 \), \( r = 30 \), \( t = 20 \)

18) In \( \triangle ABC \), \( a = 19.8 \), \( b = 19.1 \), \( c = 16.7 \)

Find the area of each triangle to the nearest tenth.

19) \[ \triangle PHK, \angle H = 45^\circ, \; P = 7 \text{ mi}, \; H = 11 \text{ mi} \]

20) \[ \triangle DEF, \angle D = 72^\circ, \; E = 4 \text{ m}, \; D = 7 \text{ m} \]

21) \[ \triangle ABC, A = 13.8 \text{ yd}, \; B = 15 \text{ yd}, \; C = 9 \text{ yd} \]

22) \[ \triangle KPH, K = 11 \text{ ft}, \; P = 14 \text{ ft}, \; H = 5 \text{ ft} \]
The Law of Cosines

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7) Find $m\angle R$

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10) Find $m\angle A$

Solve each triangle. Round your answers to the nearest tenth.

11)

12)
13) \( \triangle PQR \), \( \angle P = 15.5^\circ \), \( \angle R = 37.5^\circ \), \( PQ = 21 \)

14) \( \triangle DEF \), \( \angle D = 17.5^\circ \), \( \angle E = 84.5^\circ \), \( DE = 7 \)

15) In \( \triangle STR \), \( \angle S = 117.8^\circ \), \( r = 20.4 \), \( t = 22.1 \)
\[ m\angle T = 32.5^\circ, m\angle R = 29.7^\circ, s = 36.4 \]

16) In \( \triangle RPQ \), \( q = 11 \), \( p = 22 \), \( m\angle R = 96^\circ \)
\[ m\angle P = 58.7^\circ, m\angle Q = 25.3^\circ, r = 25.6 \]

17) In \( \triangle RST \), \( s = 13 \), \( r = 30 \), \( t = 20 \)
\[ m\angle R = 129.6^\circ, m\angle S = 19.5^\circ, m\angle T = 30.9^\circ \]

18) In \( \triangle ABC \), \( a = 19.8 \), \( b = 19.1 \), \( c = 16.7 \)
\[ m\angle A = 66.8^\circ, m\angle B = 62.4^\circ, m\angle C = 50.8^\circ \]

Find the area of each triangle to the nearest tenth.

19) \( \triangle PHK \)
\[ \text{Area} = 36.6 \text{ mi}^2 \]

20) \( \triangle DEF \)
\[ \text{Area} = 13.5 \text{ m}^2 \]

21) \( \triangle ABC \)
\[ \text{Area} = 61 \text{ yd}^2 \]

22) \( \triangle HKP \)
\[ \text{Area} = 24.5 \text{ ft}^2 \]

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