

1.
 $\sin 22 = \frac{x}{6}$
 $x = \sin(22) \times 6$
 $= 2.24763\dots$
 $= 2.25$

2.
 $\tan 34 = \frac{3}{x}$
 $x = \frac{3}{\tan 34}$
 $= 4.447\dots$
 $= 4.45$

3.
 $\sin \theta = \frac{6}{7.8}$
 $\theta = \sin^{-1}\left(\frac{6}{7.8}\right)$
 $= 50.284$
 $= 50.28$
 $= 50^\circ 17'$

4.
 $\cos \theta = \frac{4}{25}$
 $\theta = \cos^{-1}\left(\frac{4}{25}\right)$
 $= 80.793\dots$
 $= 80^\circ 48'$

5.
 $\frac{x}{\sin 25} = \frac{11}{\sin 31}$
 $= \frac{11 \times \sin 25}{\sin 31}$
 $= 9.026\dots$
 $= 9.03$

6.
 $\Delta = 180$
 $\therefore 70 + 60 = 180$
 $= 50$
 $\frac{x}{\sin 50} = \frac{45.1}{\sin 60}$
 $x = \frac{45.1 \times \sin 50}{\sin 60}$
 $= 39.893\dots$
 $= 39.89$

7.
 ~~$\sin \theta$~~
 $\frac{\sin \theta}{11} = \frac{\sin 72}{14.1}$
 $\sin \theta = \frac{11 \times \sin 72}{14.1}$
 $= \sin^{-1}\left(\frac{11 \times \sin 72}{14.1}\right)$
 $= 47.898\dots$
 $= 47^\circ 53' 54.81''$
 $= 47^\circ 54'$

8.
 $\frac{\sin \theta}{9.9} = \frac{\sin 38}{6.1}$
 $\theta = \sin^{-1}\left(\frac{9.9 \times \sin 38}{6.1}\right)$
 $= 87.69\dots$
 $= 87^\circ 41'$

9.
 $c^2 = a^2 + b^2 - 2ab \cos C$
 $x^2 = 0.6^2 + 0.8^2 - 2 \times 0.6 \times 0.8 \times \cos 44$
 $= 0.3094\dots$
 $x^2 = \sqrt{0.31} = 0.56$
 $= 0.556\dots$

10.
 $x^2 = 10.3^2 + 11.7^2 - 2 \times 10.3 \times 11.7 \times \cos 72$
 $= 168.500724$
 $x^2 = \sqrt{168.500}$
 $= 12.980$
 $= 12.98$

11.
 $\cos C = \frac{a^2 + b^2 - c^2}{2ab}$
 $\cos \theta = \frac{8^2 + 6^2 - 12^2}{2 \times 8 \times 6}$
 $\theta = \cos^{-1}\left(\frac{8^2 + 6^2 - 12^2}{2 \times 8 \times 6}\right)$
 $= 117.2746$
 $= 117^\circ 17'$

12.
 $\cos \theta = \frac{0.13^2 + 0.06^2 - 0.08^2}{2 \times 0.13 \times 0.06}$
 $= \cos^{-1}\left(\frac{\wedge \wedge \wedge}{\wedge \wedge \wedge}\right)$
 $= 25.3316\dots$
 $= 25^\circ 20'$

13.

$$\frac{1}{2} ab \sin C$$

$$= \frac{1}{2} \times (10 \times 12.4) \times \sin 36$$

$$= 36.442$$

$$= 36.44 \text{ m}^2$$

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$$\frac{1}{2} ab \sin C$$

$$= \frac{1}{2} \times (66 \times 61) \times \sin 78^\circ$$

$$= 1969.0112$$

$$= 1969.011 \text{ m}^2$$