

6.6.

Solving Right Δ 's

1. $c^2 - a^2 = b^2$

$25 - 9 = b^2$

$16 = b^2$

$4 = b$

2. $12^2 + 5^2 =$

$144 + 25 = 169$

$\sqrt{169} = 13$

$\tan^{-1}(5/12) = \angle D = 23$

$90 - 23 = 67^\circ = \angle E$

3. $\cos^{-1}(4/8) = 60^\circ = \angle F$ ⑦

$8^2 - 4^2 = 1^2$

$64 - 16 = F^2$

$\sqrt{48} = F$

$F = 6.9$

4. $\angle K = \sin^{-1}(5/7) = 46^\circ$

$\angle J = 44^\circ$

$7^2 - 5^2 = 49 - 25 = J^2$

$J = \sqrt{24} = 4.9$

5. $\tan^{-1}(4/7) = \angle M = 30^\circ$

$7^2 + 4^2 = N^2$

$49 + 16 = N^2$

$65 = N^2$

$N = \sqrt{65}$

$N = 8.1m$

⑥. $\cos^{-1}(9/17)$

$= 53^\circ$

$225 - 81 = 144$

$\sqrt{144} = 12$

$\cos 40 = \frac{5}{19}$

$5 = 14.6m$

$\sin 40 = \frac{u}{19}$

$u = 12.2m$

8. $\angle W = \cos^{-1}(14/24)$

$= 54^\circ$

$24^2 - 14^2 = W^2$

$576 - 196 = W^2$

$W^2 = 380$

$W = \sqrt{380}$

$= 19.5$

$$9. \quad \sin^{-1} \left(\frac{7}{25} \right) = \angle B \\ = 16.3^\circ$$

$$25^2 - 7^2 = d^2 \\ 625 - 49 = d^2 \\ \sqrt{576} = d \\ d = 24 \text{ mm}$$

$$10. \quad \tan 45^\circ = \frac{e}{5} \\ e = 5$$

$$5^2 + 5^2 = g^2 \\ 25 + 25 = g^2 \\ g = \sqrt{50} \\ g = 7.1 \text{ m}$$

$$11. \quad \sin 35 = \frac{h}{4.2} \\ h = 2.4 \text{ m}$$

$$12. \quad \cos 60 = \frac{l}{1.4} \\ l = 0.7 \text{ m}$$