p. 299-300
#3-15m3; 18-23;
27-42m3;

3) $\tan\theta = 0.123$

$\theta = \tan^{-1}(.123)$

$\boxed{\theta = 7.012^\circ}$

6.) $\tan\theta = 54.169$

$\theta = \tan^{-1}(54.169)$

$\boxed{\theta = 88.942^\circ}$

9.) $\sin\theta = \frac{\sqrt{3}}{2}$

$\theta = \sin^{-1}\left(\frac{\sqrt{3}}{2}\right)$

$\boxed{\theta = 60^\circ}$

12.) $\tan\theta = 1$

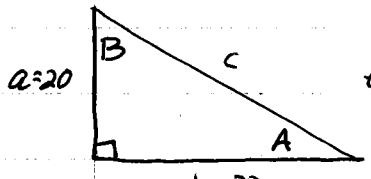
$\theta = \tan^{-1}(1)$

$\boxed{\theta = 45^\circ}$

$\tan\theta = \frac{\sin\theta}{\cos\theta}$

$(\sin\theta = \cos\theta$ at $45^\circ)$

15.) $a = 20 \quad b = 28$



$a^2 + b^2 = c^2$

$20^2 + 28^2 = c^2$

$400 + 784 = c^2$

$1184 = c^2$

$\sqrt{1184} = c$

$\boxed{34.409 = c}$

$\tan A = \frac{20}{28}$

$A = \tan^{-1}\left(\frac{5}{7}\right)$

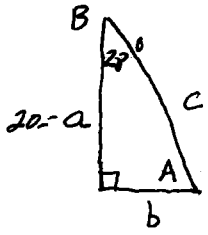
$\boxed{A = 35.538^\circ}$

$\tan B = \frac{28}{20}$

$B = \tan^{-1}\left(\frac{7}{5}\right)$

$\boxed{B = 54.462^\circ}$

18.) $a = 20 \quad B = 28^\circ$



$\tan 28^\circ = \frac{b}{20}$ $\quad \cos 28^\circ = \frac{20}{c}$

$20\tan 28^\circ = b$ $\quad \frac{c\cos 28^\circ}{\cos 28^\circ} = \frac{20}{\cos 28^\circ}$

$\boxed{10.634 = b}$ $\quad \boxed{c = 22.651}$

19.) $\sin K = a$

angle = $\boxed{K}$

✓ trig function = $\boxed{a}$

20.) $\cos^{-1} a = z$

angle = $\boxed{z}$

✓ trig function = $\boxed{a}$

21.) $(\tan c)^{-1} = d$

$\frac{1}{\tan c} = \frac{d}{1}$

$d\tan c = 1$

$\tan c = \frac{1}{d}$

angle = $\boxed{c}$

✓ trig function = $\boxed{\frac{1}{d}}$

22.) $m = \text{arcsin}\, y$

$m = \sin^{-1} y$

angle = $\boxed{m}$

✓ trig function = $\boxed{y}$

23.) $p = \cos n$

angle = $\boxed{n}$

✓ trig function = $\boxed{p}$

27.) a.) $\sin x + \cos x + \tan x$

if $x = 45^\circ$

$\sin 45^\circ + \cos 45^\circ + \tan 45^\circ$

$\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} + 1$

$\frac{2\sqrt{2}}{2} + 1$

$\boxed{\sqrt{2} + 1}$

b.) $(\sin x)^{-1} + (\cos x)^{-1} + (\tan x)^{-1}$

if $x = 45^\circ$

$(\sin 45^\circ)^{-1} + (\cos 45^\circ)^{-1} + (\tan 45^\circ)^{-1}$

$\left(\frac{\sqrt{2}}{2}\right)^{-1} + \left(\frac{\sqrt{2}}{2}\right)^{-1} + (1)^{-1}$

$\frac{2}{\sqrt{2}} + \frac{2}{\sqrt{2}} + 1$

$\frac{4}{\sqrt{2}} + 1$

$\frac{4}{\sqrt{2}}\frac{\sqrt{2}}{\sqrt{2}} = \frac{4\sqrt{2}}{2} = \boxed{2\sqrt{2} + 1}$

c.) $\sin^{-1} x + \cos^{-1} x + \tan^{-1} x$

if $x = .45$

$\sin^{-1}(.45) + \cos^{-1}(.45) + \tan^{-1}(.45)$

$26.744 + 63.256 + 24.228$

$\boxed{114.228^\circ}$ * Book is wrong

30.) $10\tan\theta - 5 = 15$

$10\tan\theta = 20$

$\tan\theta = 2$

$\theta = \tan^{-1} 2$

$\boxed{\theta = 63.435^\circ}$

33.) $9\tan(5\theta) + 1 = 10$

$9\tan(5\theta) = 9$

$\tan(5\theta) = 1$

$5\theta = \tan^{-1}(1)$

$5\theta = 45^\circ$

$\boxed{\theta = 9^\circ}$

36.) $6\cos(3\theta) + 3 = 4\cos(3\theta) + 4$

$6\cos(3\theta) - 4\cos(3\theta) = 4 - 3$

$2\cos(3\theta) = 1$

$\cos(3\theta) = \frac{1}{2}$

$3\theta = \cos^{-1}\left(\frac{1}{2}\right)$

$3\theta = 60^\circ$

$\boxed{\theta = 20^\circ}$

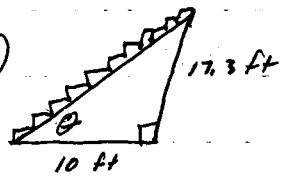
39.) SLOPE OF ROOF = 10 in 12 = $\frac{10}{12}$

$\tan\theta = \frac{10}{12}$

$\theta = \tan^{-1}\left(\frac{10}{12}\right)$

$\boxed{\theta = 39.806^\circ}$

42.)



$\tan\theta = \frac{17.3}{10}$

$\theta = \tan^{-1}\left(\frac{17.3}{10}\right)$

$\boxed{\theta = 59.971^\circ}$