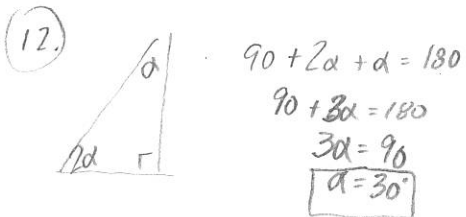
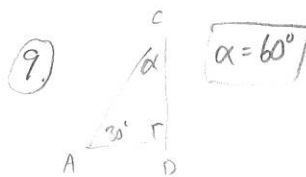


1.1 p.11 3-18 (x3), 23, 24, 25-49 odds, 53-59, odds

(3.) 45° Acute
45°
135°

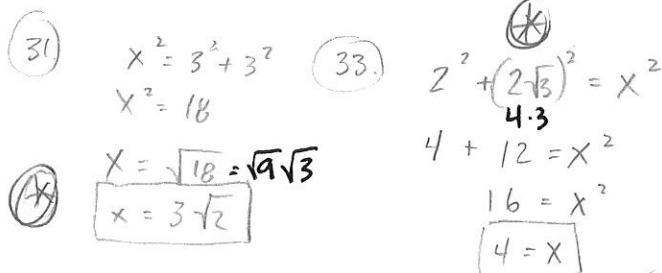
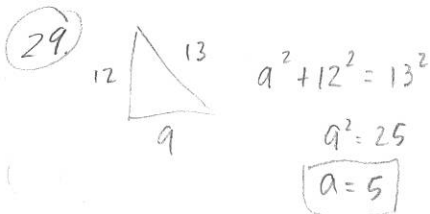
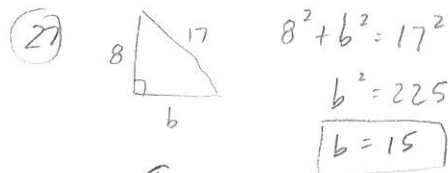
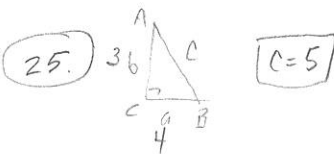
(6.) 160° Obtuse
-70°
20°



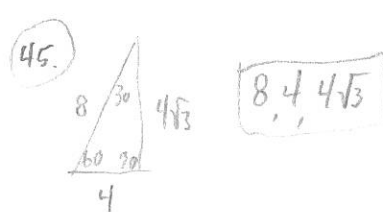
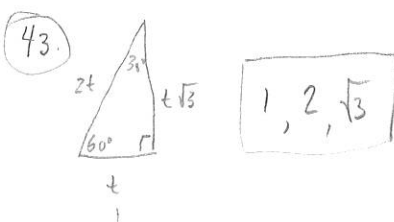
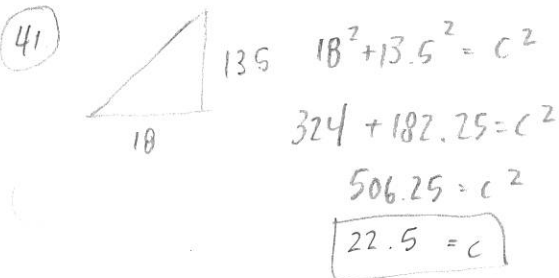
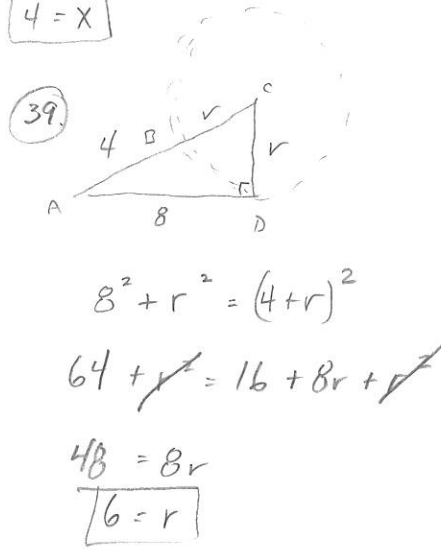
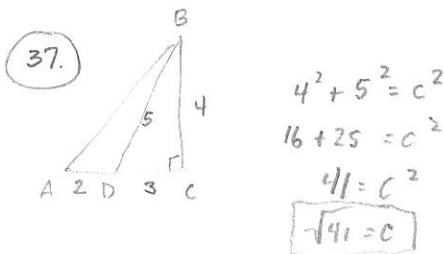
(15.) Complimentary (18.) $90 = 52 + \alpha$
 $38^\circ = \alpha$

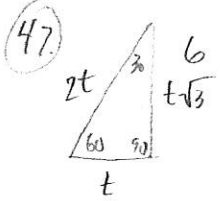
(23.) 60°

(24.) 70°



(35.) $x^2 + (x+2)^2 = (\sqrt{10})^2$
 $x^2 + x^2 + 4x + 4 = 10$
 $2x^2 + 4x + 4 = 10$
 $2x^2 + 4x - 6 = 0$
 $2(x^2 + 2x - 3) = 0$
 $2(x+3)(x-1) = 0$
 $x = -3, 1$
 $x = 1$

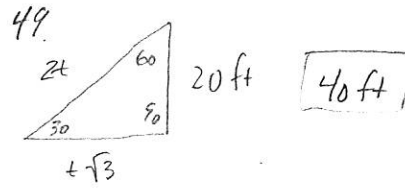




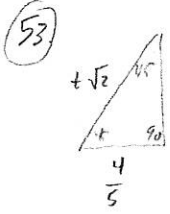
$$t = \frac{6}{\sqrt{3}} = \frac{6\sqrt{3}}{3} = 2\sqrt{3}$$

$$6, 2\sqrt{3}, 4\sqrt{3}$$

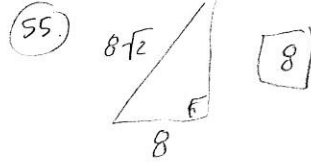
$$2t = \frac{12}{\sqrt{3}} = \frac{12\sqrt{3}}{3} = 4\sqrt{3}$$



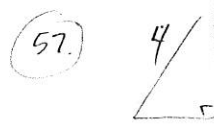
$$40 \text{ ft}$$



$$\frac{4\sqrt{2}}{5}$$

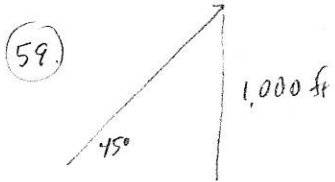


$$8$$



$$t\sqrt{2} = 4$$

$$t = \frac{4}{\sqrt{2}} = \frac{4\sqrt{2}}{2} = 2\sqrt{2}$$



$$1,000\sqrt{2} \text{ ft.} \approx 1,414 \text{ ft}$$

3. $(-3, 4)$

$\sin \theta = \frac{4}{5}$ $\csc \theta = \frac{5}{4}$

$\cos \theta = -\frac{3}{5}$ $\sec \theta = -\frac{5}{3}$

$\tan \theta = -\frac{4}{3}$ $\cot \theta = -\frac{3}{4}$

6. $(12, 5)$

$\sin \theta =$ $\csc \theta =$

$\cos \theta =$ $\sec \theta =$

$\tan \theta =$ $\cot \theta =$

9. (a, b)

$\sin \theta = \frac{b}{\sqrt{a^2+b^2}}$ $\csc \theta = \frac{\sqrt{a^2+b^2}}{b}$

$\cos \theta = \frac{a}{\sqrt{a^2+b^2}}$ $\sec \theta = \frac{\sqrt{a^2+b^2}}{a}$

$\tan \theta = \frac{b}{a}$ $\cot \theta = \frac{a}{b}$

12. $(0, -5)$

15. $(-\sqrt{5}, 2)$

18. $(-80, 60)$

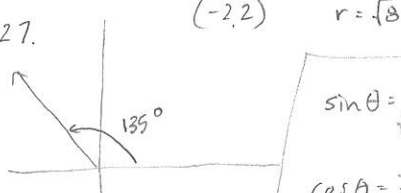
21. $(3, 4)$

$\sin \theta = \frac{4}{5}$
 $\cos \theta = \frac{3}{5}$
 $\tan \theta = \frac{4}{3}$

24. $(5, 3)$ $r = \sqrt{25+9} = \sqrt{34}$

$\sin \theta = \frac{3}{\sqrt{34}}$
 $\cos \theta = \frac{5}{\sqrt{34}}$
 $\tan \theta = \frac{3}{5}$

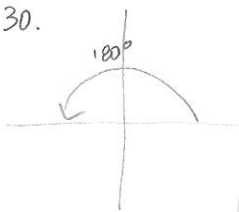
27.



$(-2, 2)$ $r = \sqrt{8}$

$\sin \theta = \frac{2}{\sqrt{8}}$
 $\cos \theta = -\frac{2}{\sqrt{8}}$
 $\tan \theta = -1$

30.



$(-1, 0)$

$\sin \theta = \frac{0}{1}$
 $\cos \theta = -\frac{1}{1}$
 $\tan \theta = \frac{0}{-1}$

33.



$(1, 0)$

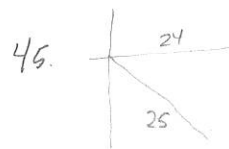
$\sin \theta = \frac{0}{1}$
 $\cos \theta = \frac{1}{1}$
 $\tan \theta = \frac{0}{1}$

1.3 p. 36 36-60 (x3)

36. QII QIII

39. QIII

42. QI QII



$$\cos \theta = \frac{24}{25}$$

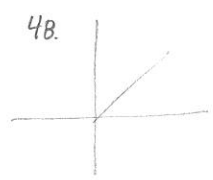
$$\sin \theta = \frac{-7}{25}$$

$$\tan \theta = \frac{-7}{24}$$

$$24^2 + x^2 = 25^2$$

$$x^2 = 49$$

$$x = 7$$



$$\tan \theta = \frac{12}{5}$$

$$\sin \theta = \frac{12}{13}$$

$$\cos \theta = \frac{5}{13}$$

$$144 + 25 = h^2$$

$$13 = h$$

51. $\sec \theta = \frac{13}{5}$

$$\cos \theta = \frac{5}{13}$$

$$\sin \theta = \frac{-12}{13}$$

$$\tan \theta = \frac{-12}{5}$$



$$5^2 + x^2 = 169$$

54. $\tan \theta = -\frac{1}{2}$



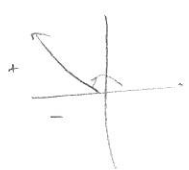
$$\sin \theta = \frac{1}{\sqrt{5}}$$

$$\cos \theta = \frac{-2}{\sqrt{5}}$$

$$1 + 4 = r^2$$

$$\sqrt{5} = r$$

57. $\cot \theta = -2$



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

$$\sin \theta = \frac{1}{\sqrt{5}}$$

$$\cos \theta = \frac{-2}{\sqrt{5}}$$

60. $\cot \theta = \frac{m}{n}$

$$\tan \theta = \frac{n}{m}$$

$$\sin \theta = \frac{n}{\sqrt{m^2 + n^2}}$$

$$\cos \theta = \frac{m}{\sqrt{m^2 + n^2}}$$

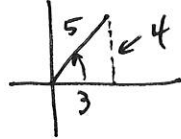
1.4 1-33 (odd), 37-42, 53

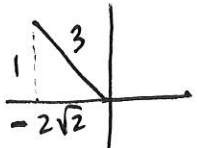
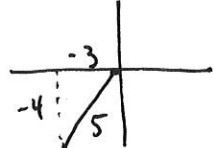
#1 $\boxed{\frac{1}{7}}$ #3 $\boxed{-\frac{3}{2}}$ #5 $\boxed{-\sqrt{2}}$ #7 $\boxed{\frac{1}{x}}$

#9 $\sin \theta = \frac{4}{5}$ #11 $\sec \theta = -2$ #13 $\tan \theta = a$
 $\boxed{\csc \theta = \frac{5}{4}}$ $\boxed{\cos \theta = -\frac{1}{2}}$ $\boxed{\cot \theta = \frac{1}{a}}$

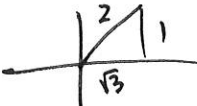
#15 $\sin \theta = \frac{3}{5}$ $\cos \theta = -\frac{4}{5}$ #17 $\sin \theta = -\frac{5}{13}$ $\cos \theta = -\frac{12}{13}$
 $\boxed{\tan \theta = -\frac{3}{4}}$ $\boxed{\cot \theta = \frac{12}{5}}$

#19 $\sin \theta = \frac{1}{\sqrt{2}}$ #21 $\tan \theta = 2$ #23 $\sin \theta = -\frac{12}{13}$ $\cos \theta = -\frac{5}{13}$
 $\boxed{\sin^2 \theta = \frac{1}{2}}$ $\boxed{\tan^3 \theta = 8}$ $\boxed{\tan \theta = \frac{12}{5}}$

#25 $\boxed{\sec \theta = -\frac{13}{5}}$ #27 $\cos \theta = \frac{3}{5}$ θ term in QI
 $\boxed{\sin \theta = \frac{4}{5}}$ 

#29 $\sin \theta = \frac{1}{3}$ θ in QII #31 $\sin \theta = -\frac{4}{5}$ θ in QIII
 $\boxed{\cos \theta = -\frac{2\sqrt{2}}{3}}$  $\boxed{\cos \theta = -\frac{3}{5}}$

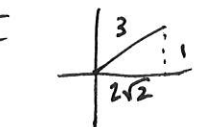
$1^2 + x^2 = 3^2$
 $\sqrt{x^2} = \sqrt{8}$
 $x = \sqrt{8} = 2\sqrt{2}$

#33 $\cos \theta = \frac{\sqrt{3}}{2}$ θ in QI $\boxed{\sin \theta = \frac{1}{2}}$


#37 $\sin \theta = \frac{1}{3}$ θ in QI

$$\boxed{\tan \theta = \frac{1}{2\sqrt{2}}}$$

or $\frac{\sqrt{2}}{4}$



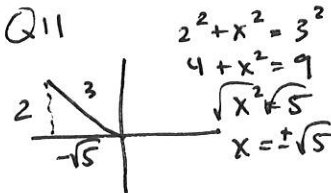
$$1^2 + x^2 = 3^2$$

$$\sqrt{x^2} = \sqrt{8}$$

$$x = \sqrt{8} = \sqrt{4 \cdot 2} = 2\sqrt{2}$$

#38 $\sin \theta = \frac{2}{3}$ θ in QII

$$\boxed{\cot \theta = -\frac{\sqrt{5}}{2}}$$



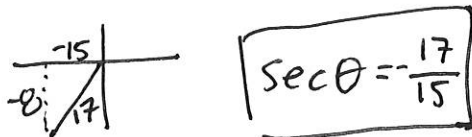
$$2^2 + x^2 = 3^2$$

$$4 + x^2 = 9$$

$$\sqrt{x^2} = \sqrt{5}$$

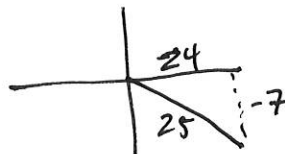
$$x = \pm\sqrt{5}$$

#39 $\tan \theta = \frac{8}{15}$ θ in QIII



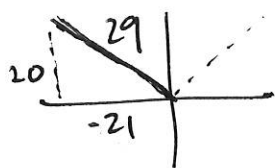
$$\boxed{\sec \theta = -\frac{17}{15}}$$

#40 $\cot \theta = -\frac{24}{7}$ θ in QIV



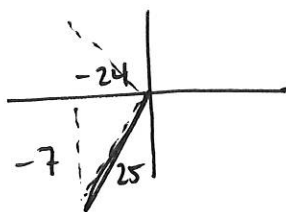
$$\boxed{\csc \theta = -\frac{25}{7}}$$

#41 $\cot \theta = -\frac{21}{20}$ $\sin \theta > 0$



$$\boxed{\csc \theta = \frac{29}{20}}$$

#42 $\tan \theta = \frac{7}{24}$ $\cos \theta < 0$



$$\boxed{\sec \theta = \frac{25}{24}}$$

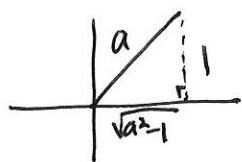
#53 $\csc \theta = a$ θ in QI

$$\csc \theta = \frac{a}{1}$$

$$1^2 + x^2 = a^2$$

$$\sqrt{x^2} = \sqrt{a^2 - 1}$$

$$x = \pm\sqrt{a^2 - 1}$$



$$\sin \theta = \frac{1}{a}$$

$$\cos \theta = \frac{\sqrt{a^2 - 1}}{a}$$

$$\tan \theta = \frac{1}{\sqrt{a^2 - 1}}$$

$$\csc \theta = a$$

$$\sec \theta = \frac{a}{\sqrt{a^2 - 1}}$$

$$\cot \theta = \sqrt{a^2 - 1}$$

$$\sqrt{32}$$

$$\sqrt{16 \cdot 2}$$

$$4\sqrt{2}$$

1.5 p. 48 3-45 (x3)

~~48-86 (evens)~~ 48-84 (x3)

$$3. \cot \theta = \frac{\cos \theta}{\sin \theta}$$

$$\cot \theta = \frac{\pm \sqrt{1 - \sin^2 \theta}}{\sin \theta}$$

$$6. \sin \theta = \pm \sqrt{1 - \cos^2 \theta}$$

$$9. \csc \theta \cot \theta = \frac{1}{\sin \theta} \cdot \frac{\cos \theta}{\sin \theta}$$

$$= \frac{\cos \theta}{\sin^2 \theta}$$

$$12. \sec \theta \tan \theta \csc \theta = \frac{1}{\sin \theta} \cdot \frac{1}{\cos \theta} \cdot \frac{\sin \theta}{\cos \theta}$$

$$= \frac{1}{\cos^2 \theta}$$

$$15. \frac{\sec \theta}{\tan \theta} = \frac{\frac{1}{\cos \theta}}{\frac{\sin \theta}{\cos \theta}}$$

$$= \frac{1}{\sin \theta}$$

$$18. \frac{\cot \theta}{\tan \theta} = \frac{\frac{\cos \theta}{\sin \theta}}{\frac{\sin \theta}{\cos \theta}}$$

$$= \frac{\cos^2 \theta}{\sin^2 \theta}$$

$$21. \tan \theta + \sec \theta = \frac{\sin \theta}{\cos \theta} + \frac{1}{\cos \theta}$$

$$= \frac{\sin \theta + 1}{\cos \theta}$$

$$24. \cos \theta \tan \theta + \sin \theta = \cos \theta \frac{\sin \theta}{\cos \theta} + \sin \theta$$

$$= 2 \sin \theta$$

$$27. \frac{\sin \theta}{\cos \theta} + \frac{1}{\sin \theta} = \frac{\sin^2 \theta}{\cos \theta \sin \theta} + \frac{\cos \theta}{\cos \theta \sin \theta}$$

$$= \frac{\sin^2 \theta + \cos \theta}{\cos \theta \sin \theta}$$

$$30. \frac{1}{\cos \theta} - \frac{1}{\sin \theta} = \frac{\sin \theta}{\cos \theta \sin \theta} - \frac{\cos \theta}{\cos \theta \sin \theta}$$

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

$$33. \frac{1}{\sin \theta} - \sin \theta = \frac{1 - \sin^2 \theta}{\sin \theta} = \frac{\cos^2 \theta}{\sin \theta}$$

$$36. (\cos \theta + 2)(\cos \theta - 5)$$

$$= \cos^2 \theta - 5 \cos \theta + 2 \cos \theta - 10$$

$$= \cos^2 \theta - 3 \cos \theta - 10$$

$$39. (1 - \sin \theta)(1 + \sin \theta)$$

$$= 1 - \sin^2 \theta$$

$$= \cos^2 \theta$$

$$42. (1 - \cot \theta)(1 + \cot \theta)$$

$$= 1 - \cot^2 \theta$$

$$45. (\sin \theta - 4)(\sin \theta - 4)$$

$$\sin^2 \theta - 8 \sin \theta + 16$$

$$\#48 \quad \sin \theta \cot \theta = \cos \theta$$

$$\sin \theta \left(\frac{\cos \theta}{\sin \theta} \right) = \cos \theta$$

$$\boxed{\cos \theta = \cos \theta}$$

$$\#51 \quad \frac{\sin \theta}{\csc \theta} = \sin^2 \theta$$

$$\frac{\sin \theta}{\frac{1}{\sin \theta}} =$$

$$\sin \theta \cdot \sin \theta =$$

$$\boxed{\sin^2 \theta = \sin^2 \theta}$$

$$\#54 \quad \frac{\sec \theta}{\tan \theta} = \csc \theta$$

$$\frac{\frac{1}{\cos \theta}}{\frac{\sin \theta}{\cos \theta}} =$$

$$\frac{1}{\cancel{\cos \theta}} \cdot \frac{\cancel{\cos \theta}}{\sin \theta} =$$

$$\boxed{\csc \theta = \csc \theta}$$

$$\#57 \quad \frac{\sec \theta \cot \theta}{\csc \theta} = 1$$

$$\frac{\frac{1}{\cancel{\cos \theta}} \cdot \frac{\cancel{\cos \theta}}{\sin \theta}}{\frac{1}{\sin \theta}} =$$

$$\frac{1}{\sin \theta}$$

$$\boxed{1 = 1}$$

$$\#60 \quad \cos \theta \cot \theta + \sin \theta = \csc \theta$$

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

$$\frac{\cos^2 \theta}{\sin \theta} + \frac{\sin^2 \theta}{\sin \theta} =$$

$$\frac{1}{\sin \theta} =$$

$$\boxed{\csc \theta = \csc \theta}$$

$$\#63 \quad \csc \theta - \sin \theta = \frac{\cos^2 \theta}{\sin \theta}$$

$$\frac{1}{\sin \theta} - \frac{\sin^2 \theta}{\sin \theta} =$$

$$\boxed{\frac{\cos^2 \theta}{\sin \theta} = \frac{\cos^2 \theta}{\sin \theta}}$$

$$\#66 \quad \sec \theta \cot \theta - \sin \theta = \frac{\cos^2 \theta}{\sin \theta}$$

$$\frac{1}{\cancel{\cos \theta}} \cdot \frac{\cancel{\cos \theta}}{\sin \theta} - \frac{\sin^2 \theta}{\sin \theta} =$$

$$\frac{1 - \sin^2 \theta}{\sin \theta} =$$

$$\boxed{\frac{\cos^2 \theta}{\sin \theta} = \frac{\cos^2 \theta}{\sin \theta}}$$

$$\#69 \quad (\sin \theta + 1)(\sin \theta - 1) = -\cos^2 \theta$$

$$\sin^2 \theta - 1 = -\cos^2 \theta$$

$$-(1 - \sin^2 \theta) =$$

$$\boxed{-\cos^2 \theta = -\cos^2 \theta}$$

$$\#72 \quad 1 - \frac{\sin \theta}{\csc \theta} = \cos^2 \theta$$

$$1 - \frac{\sin \theta}{\frac{1}{\sin \theta}} =$$

$$1 - \sin^2 \theta =$$

$$\boxed{\cos^2 \theta = \cos^2 \theta}$$

$$\#75 \quad \sin \theta (\sec \theta + \csc \theta) = \tan \theta + 1$$

$$\sin \theta \left(\frac{1}{\cos \theta} + \frac{1}{\sin \theta} \right) =$$

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

$$\boxed{\tan \theta + 1 = \tan \theta + 1}$$

$$\#78 \quad \cos \theta (\csc \theta + \tan \theta) = \cot \theta + \sin \theta$$

$$\cos \theta \left(\frac{1}{\sin \theta} + \frac{\sin \theta}{\cos \theta} \right) =$$

$$\frac{\cos \theta}{\sin \theta} + \sin \theta$$

$$\boxed{\cot \theta + \sin \theta = \cot \theta + \sin \theta}$$

$$\#81 \quad \sqrt{x^2 + 4}$$

$$= \sqrt{(2 \tan \theta)^2 + 4}$$

$$= \sqrt{4 \tan^2 \theta + 4}$$

$$= \sqrt{4(\tan^2 \theta + 1)}$$

$$= 2\sqrt{\tan^2 \theta + 1}$$

$$= 2\sqrt{\sec^2 \theta}$$

$$= 2 \sec \theta$$

$$\#84 \quad \sqrt{25 - (5 \sin \theta)^2}$$

$$= \sqrt{25 - 25 \sin^2 \theta}$$

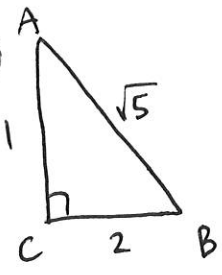
$$= \sqrt{25(1 - \sin^2 \theta)}$$

$$= 5\sqrt{\cos^2 \theta}$$

$$= 5 \cos \theta$$

P.2.1 3-60 (x3), 74-79

#3



$$c = \sqrt{1^2 + 2^2}$$

$$c = \sqrt{5}$$

$$\sin A = \frac{2}{\sqrt{5}} \quad \csc A = \frac{\sqrt{5}}{2}$$

$$\cos A = \frac{1}{\sqrt{5}} \quad \sec A = \sqrt{5}$$

$$\tan A = 2 \quad \cot A = \frac{1}{2}$$

#6



$$c = \sqrt{3^2 + (\sqrt{7})^2}$$

$$c = \sqrt{16}$$

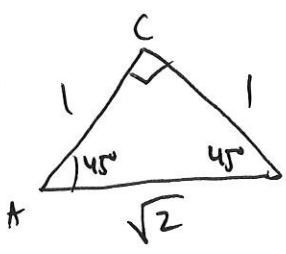
$$c = 4$$

$$\sin A = \frac{3}{4} \quad \csc A = \frac{4}{3}$$

$$\cos A = \frac{\sqrt{7}}{4} \quad \sec A = \frac{4}{\sqrt{7}}$$

$$\tan A = \frac{3}{\sqrt{7}} \quad \cot A = \frac{\sqrt{7}}{3}$$

#9

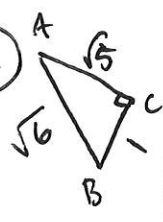


$$\sin A = \frac{1}{\sqrt{2}} \quad \csc A = \sqrt{2}$$

$$\cos A = \frac{1}{\sqrt{2}} \quad \sec A = \sqrt{2}$$

$$\tan A = 1 \quad \cot A = 1$$

#12

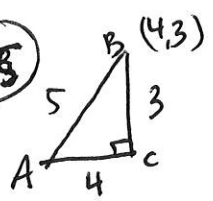


$$\sin A = \frac{1}{\sqrt{6}} \quad \csc A = \sqrt{6}$$

$$\cos A = \frac{\sqrt{5}}{\sqrt{6}} \quad \sec A = \frac{\sqrt{6}}{\sqrt{5}}$$

$$\tan A = \frac{1}{\sqrt{5}} \quad \cot A = \sqrt{5}$$

#15



$$\sin A = \frac{3}{5}$$

$$\cos A = \frac{4}{5}$$

$$\tan A = \frac{3}{4}$$

#18

$$\cos 40^\circ = \sin 50^\circ$$

#21

$$\sin x = \cos 90^\circ - x$$

#24

$$\tan(90^\circ - y) = \cot 90^\circ$$

#27

$$4 \sin 30^\circ = 4 \left(\frac{1}{2}\right) = 2$$

#30

$$\sin^3 30^\circ = \left(\frac{1}{2}\right)^3 = \frac{1}{8}$$

#33

$$\sin^2 45^\circ - 2 \sin 45^\circ \cos 45^\circ + \cos^2 45^\circ$$

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

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

$$1 - 1 = 0$$

#36

$$\tan^2 45^\circ + \tan^2 60^\circ$$

$$(1)^2 + (\sqrt{3})^2$$

$$1 + 3 = 4$$

#39

$$4 \cos(60^\circ - 30^\circ) = 4 \cos 30^\circ$$

$$= 4 \frac{\sqrt{3}}{2} = 2\sqrt{3}$$

#42

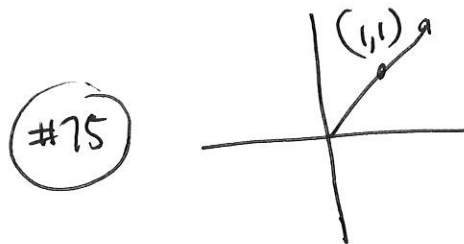
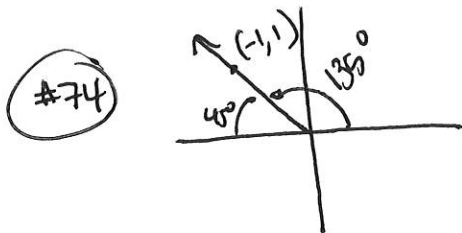
$$3 \sin 2(45^\circ) = 3 \sin 90^\circ$$

$$= 3(1) = 3$$

$$\#45 \quad \sec 30^\circ = \frac{1}{\cos 30^\circ} = \frac{2}{\sqrt{3}} \quad \#48 \quad \sec 60^\circ = \frac{1}{\cos 60^\circ} = 2$$

$$\#51 \quad \sec 45^\circ = \frac{1}{\cos 45^\circ} = \sqrt{2} \quad \#54 \quad \cos 30^\circ = .866$$

$$\#57 \quad \sin 45^\circ = .707 \quad \#60 \quad \frac{1}{\sqrt{3}} = .577$$



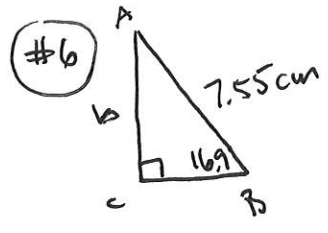
$$\#76 \quad -90^\circ = 270^\circ$$

$$\#77 \quad -135^\circ = 225^\circ$$

$$\#78 \quad -210^\circ = 150^\circ$$

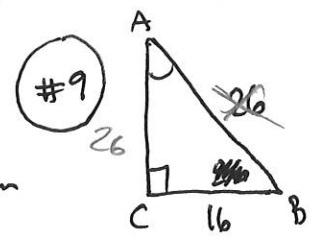
$$\#79 \quad -300^\circ = 60^\circ$$

P.2.3 6-33 (x3) (but not 24), 39-49 (odd)



$$\sin 16.9^\circ = \frac{b}{7.55 \text{ cm}}$$

$$2.195 \text{ cm} = b$$

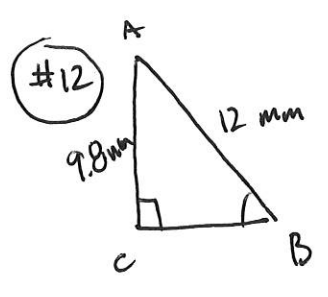


$$\sin A = \frac{16}{26} \quad \tan^{-1} = \frac{16}{26}$$

$$A = \sin^{-1}\left(\frac{16}{26}\right)$$

$$A = 37.98^\circ$$

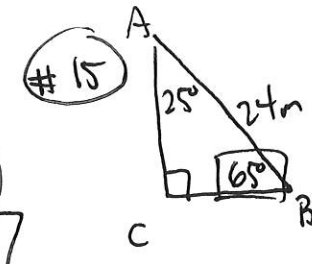
$$A = 31.608$$



$$\sin B = \frac{9.8}{12}$$

$$B = \sin^{-1}\left(\frac{9.8}{12}\right)$$

$$B = 54.752^\circ$$

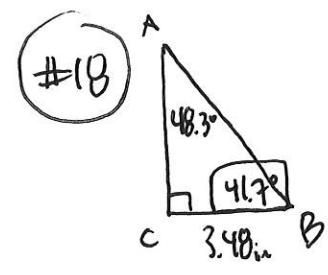


$$\sin 25^\circ = \frac{a}{24}$$

$$a = 10.143 \text{ m}$$

$$\cos 25^\circ = \frac{b}{24}$$

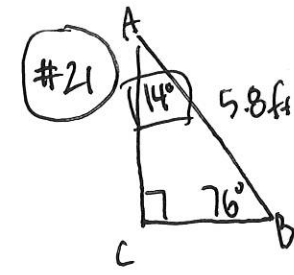
$$b = 21.751 \text{ m}$$



$$\sin 41.7^\circ = \frac{b}{3.48}$$

$$\tan 41.7^\circ = \frac{b}{3.48}$$

$$b = 3.101 \text{ in}$$

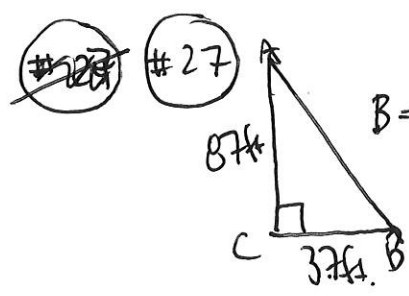


$$\sin 76^\circ = \frac{b}{5.8}$$

$$b = 5.628 \text{ ft}$$

$$\cos 76^\circ = \frac{a}{5.8}$$

$$1.463 \text{ ft} = a$$



$$B = \tan^{-1}\left(\frac{87}{37}\right)$$

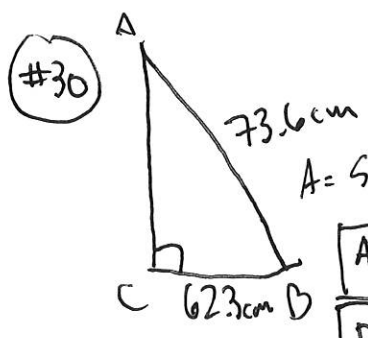
$$B = 66.961^\circ$$

$$A = \tan^{-1}\left(\frac{37}{87}\right)$$

$$A = 23.039^\circ$$

$$\text{hyp} = \frac{37}{\sin 23.039^\circ}$$

$$94.543 \text{ ft}$$



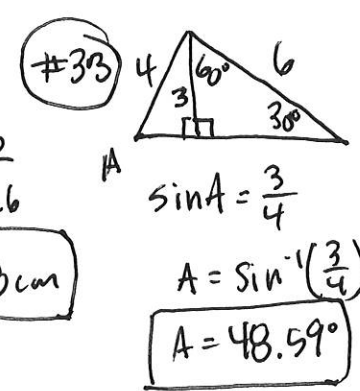
$$A = \sin^{-1}\left(\frac{62.3}{73.6}\right)$$

$$A = 57.829^\circ$$

$$B = 32.171^\circ$$

$$\cos(57.829^\circ) = \frac{b}{73.6}$$

$$b = 39.188 \text{ cm}$$

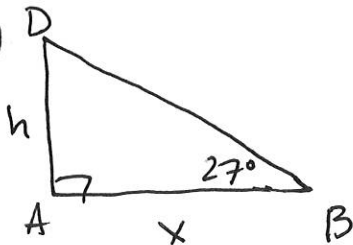


$$\sin A = \frac{3}{6}$$

$$A = \sin^{-1}\left(\frac{3}{6}\right)$$

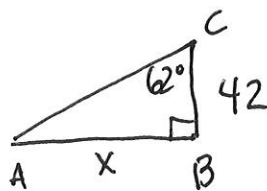
$$A = 48.59^\circ$$

#39



$$\tan 27^\circ = \frac{h}{78.991}$$

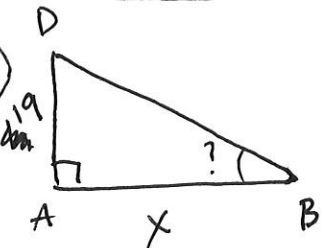
$$h = 40.248$$



$$\tan 62^\circ = \frac{x}{42}$$

$$x = 78.991$$

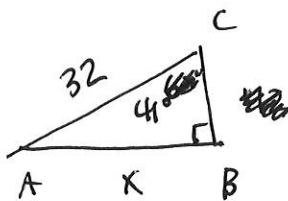
#41



$$\tan B = \frac{19}{x}$$

$$B = \tan^{-1}\left(\frac{19}{20.994}\right)$$

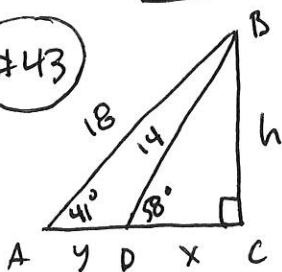
$$B = 42.146^\circ$$



$$\sin 41^\circ = \frac{x}{32}$$

$$x = 20.994$$

#43



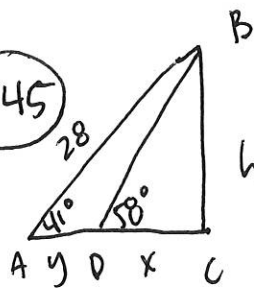
$$\cos 58^\circ = \frac{x}{14}$$

$$x = 7.419$$

$$\cos 41^\circ = \frac{y + 7.419}{18}$$

$$y = 6.166$$

#45



$$\sin 41^\circ = \frac{h}{28}$$

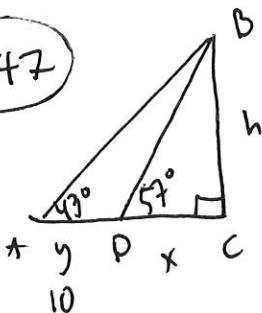
$$h = 18.37$$

$$\tan 58^\circ = \frac{h}{x}$$

$$x = \frac{18.37}{\tan 58^\circ}$$

$$x = 11.479$$

#47



$$\tan 57^\circ = \frac{h}{x}$$

$$h = x \tan 57^\circ$$

$$\tan 43^\circ = \frac{h}{10+x}$$

$$(10+x)(\tan 43^\circ) = h$$

$$(10+x)(\tan 43^\circ) = x \tan 57^\circ$$

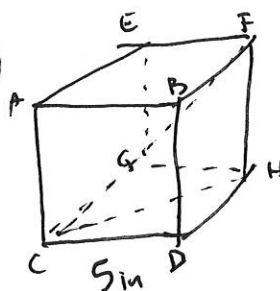
$$(10+x)(.933) = x(1.235)$$

$$9.33 + .933x = 1.235x$$

$$9.33 = .302x$$

$$30.894 = x$$

#49



$$hyp^2 = 5^2 + (5\sqrt{2})^2$$

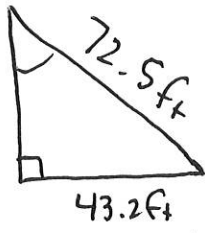
$$= 25 + 50$$

$$CF = 75$$

$$hyp = 8.66$$

P.2.4 | 7-8, 10-11, 21, 22, 24, 25, 27, 29, 36-42 (odd)

#7



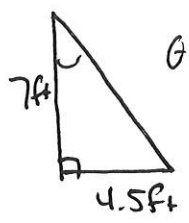
$$\sin A = \frac{43.2}{72.5}$$

$$A = \sin^{-1}\left(\frac{43.2}{72.5}\right)$$

$$A = 36.574^\circ$$



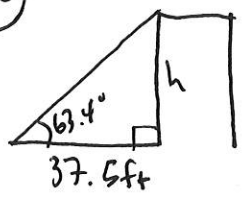
#8



$$\theta = \tan^{-1}\left(\frac{4.5}{7}\right)$$

$$\theta = 32.735^\circ$$

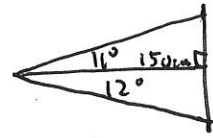
#10



$$\tan 63.4^\circ = \frac{h}{37.5}$$

$$h = 74.886 \text{ ft}$$

#11

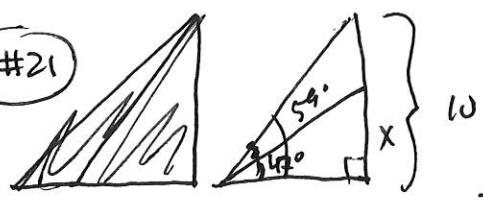


$$\tan 11^\circ = \frac{h}{150} = 29.157$$

$$31.883$$

$$\text{Mirror} = 61.04 \text{ cm}$$

#21



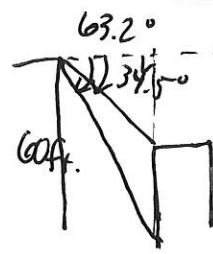
$$\tan 59^\circ = \frac{10}{\text{Adj}}$$

$$\text{Adj} = 6.009 \text{ ft}$$

$$\tan 47^\circ = \frac{x}{6.009}$$

$$x = 6.444 \text{ ft}$$

#22



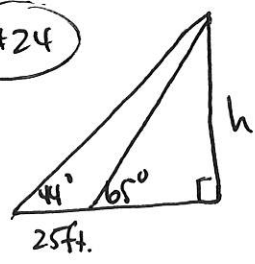
$$\tan 34.5^\circ = \frac{\text{opp}}{30.308}$$

$$\tan 63.2^\circ = \frac{60}{x}$$

$$\text{opp} = 20.83 \text{ ft}$$

$$60 - 20.83 = 39.17 \text{ ft}$$

#24



$$\tan 44^\circ = \frac{h}{25+x}$$

$$\tan 65^\circ = \frac{h}{x}$$

$$(25+x)(\tan 44^\circ) = x \tan 65^\circ$$

$$24.15 + .966x = 2.145x$$

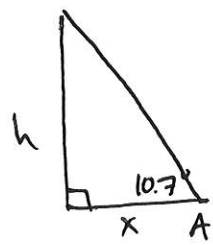
$$24.15 = 1.179x$$

$$x = 20.483$$

$$h = 12.393 \text{ ft}$$

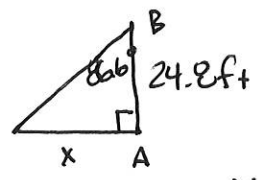
$$h = 43.926 \text{ ft}$$

#25



$$\tan 10.7^\circ = \frac{h}{417.431}$$

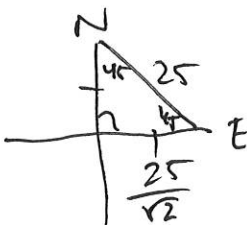
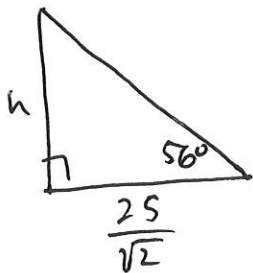
$$417.431 = x$$



$$\tan 66^\circ = \frac{x}{24.8 \text{ ft}}$$

$$h = 78.874 \text{ ft}$$

#27



$$\tan 56^\circ = \frac{h}{\left(\frac{25}{\sqrt{2}}\right)}$$

$$h = 26.208 \text{ ft}$$

#29



$$\sin 76.6 = \frac{r}{r+112}$$

$$(r+112)(\sin 76.6) = r$$

$$(r+112)(.973)$$

$$.973r + 108.976 = r$$

$$108.976 = .027r$$

$$4036.148 = r$$

#37

$$\sin \theta \cot \theta = \cos \theta$$

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

$$\boxed{\cos \theta = \cos \theta}$$

#39

$$\frac{\sec \theta}{\tan \theta} = \csc \theta$$

$$\frac{1}{\cos \theta} =$$

$$\frac{1}{\cos \theta} =$$

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

$$1 =$$

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

$$\boxed{\csc \theta = \csc \theta}$$

#41

$$\sec \theta - \cos \theta = \frac{\sin^2 \theta}{\cos \theta}$$

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

$$\frac{1 - \cos^2 \theta}{\cos \theta} =$$

$$\boxed{\frac{\sin^2 \theta}{\cos \theta} = \frac{\sin^2 \theta}{\cos \theta}}$$