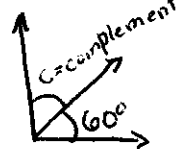



Key PT #1 Trig W10

①  $C + 60 = 90$
 $C = 90 - 60$
 $C = 30^\circ$

②  $S + 114 = 180$
 $S = 180 - 114$
 $S = 66^\circ$

③ $180^\circ 59' 60''$
 $- 50^\circ 39' 27''$
 $\hline 129^\circ 20' 33''$

④ $90^\circ 59' 60''$
 $- 34^\circ 26' 52''$
 $\hline 55^\circ 33' 8''$

⑤ $192 \frac{\text{rev}}{\text{min}} \cdot \frac{1 \text{ min}}{60 \text{ sec}} = \frac{192 \text{ rev}}{60 \text{ sec}}$
 $\boxed{3.2 \frac{\text{rev}}{\text{sec}}}$

⑥ $31^\circ + \frac{48}{60} + \frac{17}{3600} = 31 + \frac{497}{3600}$
 $= 31.1380555 \approx \boxed{31.14^\circ}$

⑦ $132^\circ + \frac{58}{60} + \frac{22}{3600} = 132 + \frac{3502}{3600}$
 $= 132 + 0.972777 \approx \boxed{132.97^\circ}$

⑧ $300^\circ + \frac{46}{60} + \frac{4}{3600} = 300 + \frac{484}{3600}$
 $= 300.1344 \approx \boxed{300.13^\circ}$

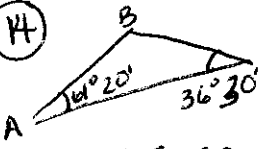
⑨ 209.64° $0.64 \times 60' = 38.4'$
 $\boxed{209^\circ 38' 24''}$ $0.4' \times \frac{60''}{1'} = 24''$

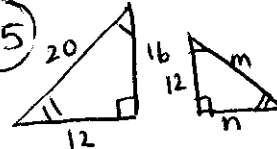
⑩ 31.43° $0.43 \times 60' = 25.8'$
 $\boxed{31^\circ 25' 48''}$ $0.8' \times \frac{60''}{1'} = 48''$

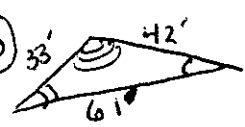
⑪ 59.09° $0.09 \times 60' = 5.4'$
 $\boxed{59^\circ 5' 24''}$ $0.4' \times \frac{60''}{1'} = 24''$

⑫ Coterminal to -98° is $\boxed{262^\circ}$
 $\rightarrow 360 - 98 = 262$
 Next larger mult of 360 + x

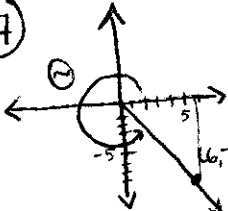
⑬ Coterminal to 435° is $\boxed{75^\circ}$
 $435 - 360 = 75$
 Next smallest mult of 360

⑭  $\angle A + \angle B + \angle C = 180$
 $\angle B = 180 - 61^\circ 20' - 36^\circ 30'$
 $\hline 82^\circ 10'$

⑮  $\frac{20}{12} = \frac{16}{n}$
 $\frac{12}{n} = \frac{16}{12}$
 $16n = 12 \cdot 12$
 $\frac{16n}{16} = \frac{144}{16}$
 $n = 9 \text{ units}$

⑯  $\frac{33}{3} = \frac{42}{m}$
 $\frac{33m}{33} = \frac{42 \cdot 3}{33}$
 $m = \frac{42}{11} \text{ in.}$
 $\frac{33}{3} = \frac{61}{l}$
 $\frac{33l}{33} = \frac{61 \cdot 3}{33}$
 $l = \frac{61}{11} \text{ in.}$

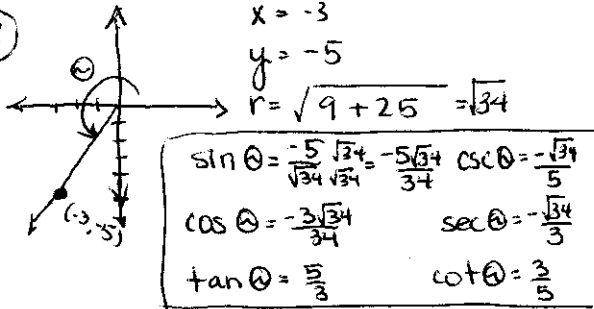
or $\boxed{m = 3.82 \text{ in} \ \& \ n = 5.55 \text{ in.}}$

⑰  $y = -8$
 $x = 6$
 $r = \sqrt{64 + 36} = \sqrt{100} = 10$
 $\sin \theta = \frac{-8}{10} = -\frac{4}{5}$ $\csc \theta = -\frac{5}{4}$
 $\cos \theta = \frac{6}{10} = \frac{3}{5}$ $\sec \theta = \frac{5}{3}$
 $\tan \theta = \frac{-8}{6} = -\frac{4}{3}$ $\cot \theta = -\frac{3}{4}$

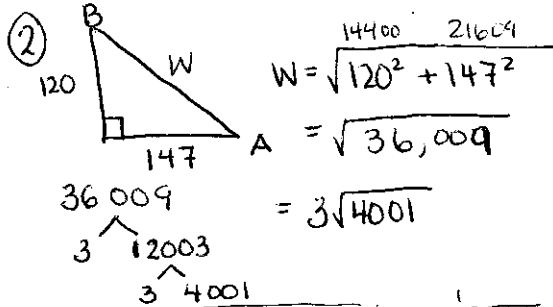
Key PT #1 Trig W/O Con'd

Ch. 2

18



1) $\sin 89^\circ = \cos(90 - 89^\circ)$
 $\Rightarrow \sin 89^\circ = \boxed{\cos 1^\circ}$



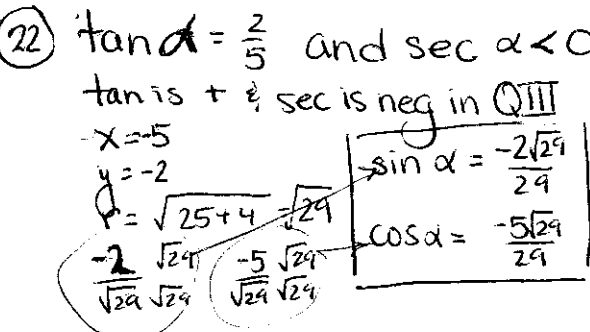
$\csc A = \frac{\text{hyp}}{\text{opp}} = \frac{W}{120}$	or $\frac{1}{\csc A} = \frac{120}{W}$
$\sec A = \frac{\text{hyp}}{\text{adj}} = \frac{W}{147}$	or $\frac{1}{\sec A} = \frac{147}{W}$
$\cot A = \frac{\text{adj}}{\text{opp}} = \frac{147}{120}$	or $\frac{1}{\cot A} = \frac{120}{147}$

Although they weren't specific enough in my mind - the book answer was what the book expected.

19) $3 \sin 90^\circ + 2 \cos 180^\circ + 5 \tan 0^\circ$
 $3(\frac{1}{1}) + 2(\frac{-1}{1}) + 5(\frac{0}{1})$
 $= 3 - 2 + 0 = \boxed{1}$

20) $\csc^2 90^\circ + (\sin 90^\circ)(\cos 180^\circ)$
 $\Rightarrow (1)^2 + (1)(-1) = \boxed{0}$

21) $\sin^2 57^\circ + \cos^2 57^\circ = \boxed{1}$
 See Pythagorean ID
 $\sin^2 \theta + \cos^2 \theta = 1$



23) $\sin B = \frac{\sqrt{5}}{2}$ since $\sqrt{5} \approx 2.236$
 $\sin B \approx 1.118$ range of sin is $[-1, 1]$
 so **impossible**

24) $\tan \theta = -7.249$
 Range of tan is $(-\infty, \infty)$ so **possible**

25) Quadrantal \angle $\sin \theta$ values are $\boxed{1, 0, -1}$ See #19

3) $\sec z = \csc(z + 42^\circ)$
 cofunctions sum to 90°
 $z + z + 42 = 90 \Rightarrow 2z = 48$
 $\boxed{z = 24^\circ}$

4) $\tan(3B + 10^\circ) = \cot(B + 9^\circ)$
 see #3 $3B + 10 + B + 9 = 90$
 $4B + 19 = 90 \Rightarrow 4B = 71 \Rightarrow B = \frac{71}{4}$
 $\boxed{B = 17\frac{3}{4}^\circ}$

5) $\cot 315^\circ 13'$
 coterminal with $360^\circ - 315^\circ 13' = 44^\circ 47'$
 $359^\circ 60' - 315^\circ 13' = 44^\circ 47'$
 none of the others are ref \angle 's so just $\boxed{B. \cot 44^\circ 47'}$

6) $\cot 120^\circ = \cot 60^\circ = \frac{\sqrt{3}}{3}$ since $\frac{180-120}{60} = 2$

7) $3 \sin^2 210^\circ + \tan 150^\circ = \frac{9 - 4\sqrt{3}}{12}$

8) -7

9) $3(\frac{1}{2})^2 + (\frac{-\sqrt{3}}{2}) = \frac{3}{4} - \frac{\sqrt{3}}{2} = \frac{3 - 2\sqrt{3}}{4}$

10) $\sin 240^\circ = 2 \cos 120^\circ \sin 30^\circ$
 $-\sin 60^\circ = 2 \sin^2 30^\circ$ **False**

9) $\tan 41^\circ < \tan 26^\circ$ \Rightarrow $\downarrow y \downarrow$ $x \uparrow$ \Rightarrow **False**