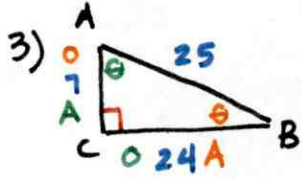
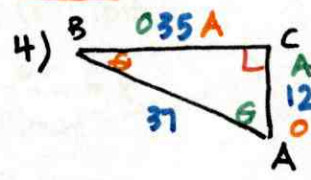


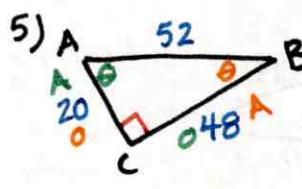
1) The tangent ratio compares the length of opposite leg to the length of adjacent leg. **SOHCAHTOA**



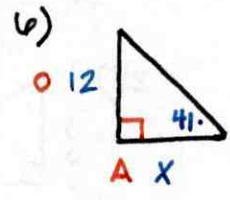
$\tan A = \frac{24}{7} = 3.4286$
 $\tan B = \frac{7}{24} = .2917$



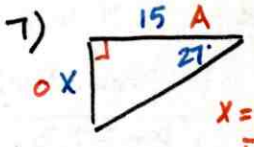
$\tan A = \frac{35}{12} = 2.9167$
 $\tan B = \frac{12}{35} = .3429$



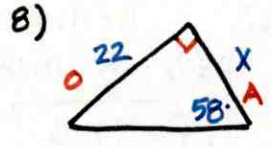
$\tan A = \frac{48}{20} = 2.4000$
 $\tan B = \frac{5}{12} = .4167$



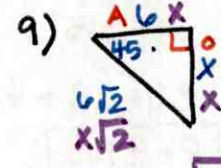
$\tan(41) = \frac{12}{X}$
 $X = \frac{12}{\tan(41)}$
 $X = 13.8$



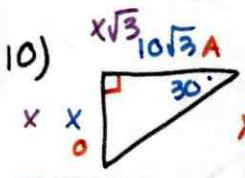
$\tan(27) = \frac{X}{15}$
 $X = 15(\tan(27))$
 $X = 7.6$



$\tan(58) = \frac{22}{X}$
 $X = \frac{22}{\tan(58)}$
 $X = 13.7$

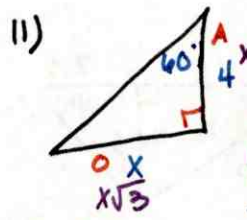


$\tan(45) = \frac{X}{6}$
 $X = 6(\tan(45))$
 $X = 6$
they are the same

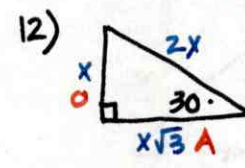


$\tan(30) = \frac{X}{10}$
 $X = 10(\tan(30))$
 $X = 10$

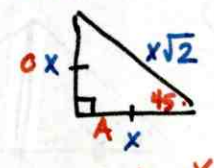
$X = 10$ They are the same
 $X\sqrt{3} = 10\sqrt{3}$



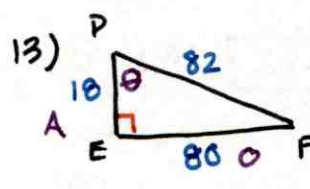
$\tan(60) = \frac{X}{4}$
 $X = 4(\tan(60))$
 $X = 6.9282$
They are the same



$\tan(30) = \frac{X}{2X}$
 $\tan(30) = \frac{1}{2}$

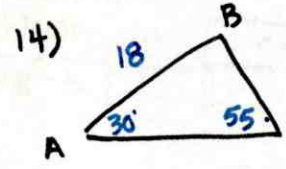


$\tan(45) = \frac{X}{X}$
 $\tan(45) = 1$



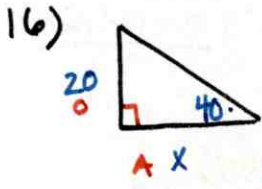
$\tan D = \frac{18}{80}$
 $\tan D = \frac{18}{80}$

$X = 4$
 $X\sqrt{3} = 4\sqrt{3} \approx 6.9282$

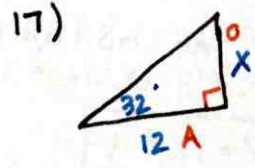


$\tan(55) = \frac{18}{BC}$
 ΔABC is not a rt Δ .

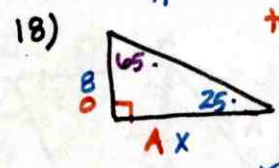
15) must have a rt Δ and an acute angle, one of the legs (opposite or adjacent)



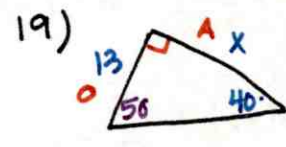
$\tan(40) = \frac{20}{X}$
 $X = \frac{20}{\tan(40)}$



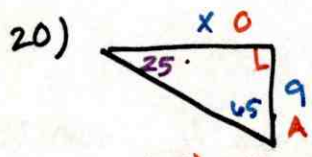
$\tan(32) = \frac{X}{12}$
 $X = 12(\tan(32))$
 $X = 7.5$



$\tan(25) = \frac{8}{X}$
 $X = \frac{8}{\tan(25)}$
 $X = 17.2$



$\tan(40) = \frac{13}{X}$
 $X = \frac{13}{\tan(40)}$
 $X = 15.5$

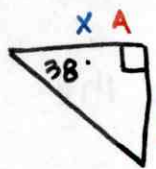


$\tan(65) = \frac{X}{9}$
 $X = 9(\tan(65))$
 $X = 19.3$

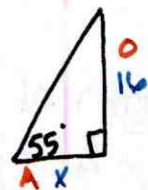
$\tan(65) = \frac{X}{8}$
 $X = 17.2$

$\tan(50) = \frac{X}{13}$
 $X = \frac{13}{\tan(50)}$
 $X = 15.5$

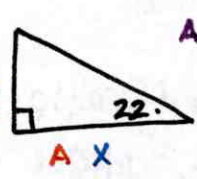
$\tan(25) = \frac{9}{X}$
 $X = \frac{9}{\tan(25)}$
 $X = 19.3$

21)  $A = \frac{14.1(11)}{2}$
 $A = 77.4$

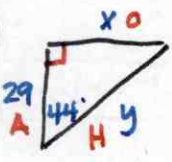
$\tan(38) = \frac{11}{x}$
 $x = \frac{11}{\tan(38)}$
 $x = 14.1$

22)  $A = \frac{11.2(16)}{2}$
 $A = 89.6$

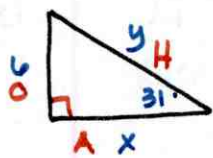
$\tan(55) = \frac{16}{x}$
 $x = \frac{16}{\tan(55)}$
 $x = 11.2$

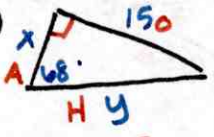
23)  $A = \frac{17.3(7)}{2}$
 $A = 60.6$

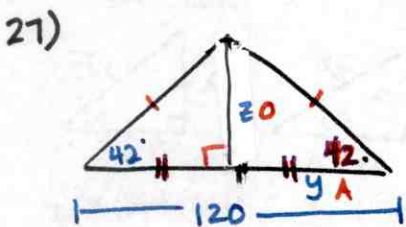
$\tan(22) = \frac{7}{x}$
 $x = \frac{7}{\tan(22)}$
 $x = 17.3$

24)  $\cos(44) = \frac{29}{y}$
 $y = \frac{29}{\cos(44)}$
 $y = 40.3$

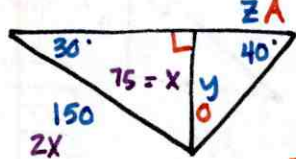
$\tan(44) = \frac{x}{29}$
 $x = 29(\tan(44))$
 $x = 28$
 $P = 29 + 28 + 40.3$
 $P = 97.3$

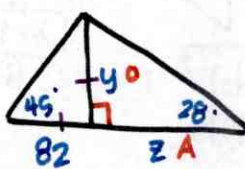
25)  $\sin(31) = \frac{6}{y}$
 $y = \frac{6}{\sin(31)}$
 $y = 11.6$
 $\tan(31) = \frac{6}{x}$
 $x = \frac{6}{\tan(31)}$
 $x = 10$
 $P = 6 + 10 + 11.6$
 $P = 27.6$

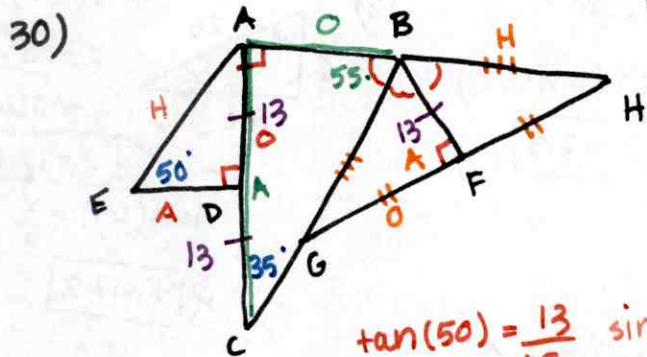
26)  $\sin(68) = \frac{15}{y}$
 $y = \frac{15}{\sin(68)}$
 $y = 16.2$
 $\tan(68) = \frac{15}{x}$
 $x = \frac{15}{\tan(68)}$
 $x = 6.1$
 $P = 15 + 6.1 + 16.2$
 $P = 37.3$



$y = 120/2$
 $y = 60$
 $\tan(42) = \frac{z}{60}$
 $z = 60(\tan(42))$
 $z = 54$

28)  $x = 75$
 $2x = 150$
 $y = 75$
 $\tan(40) = \frac{75}{z}$
 $z = \frac{75}{\tan(40)}$
 $z = 89.4$

29)  $y = 82$
 $\tan(28) = \frac{92}{z}$
 $z = \frac{82}{\tan(28)}$
 $z = 154.2$



$P = ED + AE + AB + BH + HG + GC + CD$
 $10.9 + 17 + 18.2 + 22.7 + 24.9 + 8.5 + 13$
 $P = 128.1$

AC = 26 → AD = 13
 AD = BF DC = 13
 Dismp of AC

$\tan(50) = \frac{13}{AE}$
 $AE = \frac{13}{\tan(50)}$
 $AE = 10.9$
 $\sin(50) = \frac{13}{AB}$
 $AB = \frac{13}{\sin(50)}$
 $AB = 17$

$\tan(35) = \frac{AB}{26}$
 $AB = 26(\tan(35))$
 $AB = 18.2$
 $\sin(55) = \frac{26}{BC}$
 $BC = \frac{26}{\sin(55)}$
 $BC = 31.2$

$\cos(55) = \frac{13}{BH}$
 $BH = \frac{13}{\cos(55)}$
 $BH = 22.7$
 $\tan(55) = \frac{GF}{13}$
 $GF = \frac{13}{\tan(55)}$
 $GF = 18.9$
 $FH = 18.9$

$CG = 31.2 - 22.7$
 $CG = 8.5$