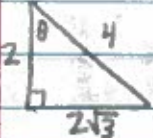


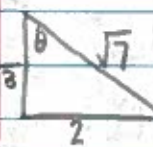
Homework: Right Triangle Trigonometry

p. 516-517 # 13, 16, 29, 31, 39, 41, 47, 50

13.  $2^2 + x^2 = 4^2$
 $x^2 = 12$
 $x = \sqrt{12} = 2\sqrt{3}$

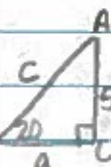
$\sin \theta = \frac{2\sqrt{3}}{4} = \frac{\sqrt{3}}{2}$
 $\cos \theta = \frac{2}{4} = \frac{1}{2}$
 $\tan \theta = \frac{2\sqrt{3}}{2} = \sqrt{3}$

$\csc \theta = \frac{2}{\sqrt{3}} =$
 $\sec \theta = 2$
 $\cot \theta = \frac{1}{\sqrt{3}} =$

16.  $(\sqrt{3})^2 + 2^2 = x^2$
 $3 + 4 = x^2$
 $7 = x^2$ $\sqrt{7} = x$

$\sin \theta = \frac{2}{\sqrt{7}} = \frac{2\sqrt{7}}{7}$
 $\cos \theta = \frac{\sqrt{3}}{\sqrt{7}} = \frac{\sqrt{21}}{7}$
 $\tan \theta = \frac{2}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$

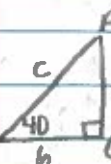
$\csc \theta = \frac{\sqrt{7}}{2}$
 $\sec \theta = \frac{\sqrt{7}}{\sqrt{3}} =$
 $\cot \theta = \frac{\sqrt{3}}{2}$

29.  $a \cdot \tan 20 = \frac{5}{a} \cdot a$
 $a \tan 20 = 5$
 $a = \frac{5}{\tan 20} = 13.737$

$\sin 20 = \frac{5}{c}$
 $c = \frac{5}{\sin 20} = 14.619$

$\angle A = 70^\circ$
 $\angle B = 20^\circ$
 $\angle C = 90^\circ$

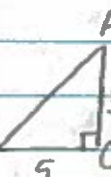
$a = 13.737$
 $b = 5$
 $c = 14.619$

31.  $b \cdot \tan 40 = \frac{b}{b} \cdot b$
 $b \tan 40 = b$
 $5.035 = b$

$c \cos 40 = \frac{b}{c} \cdot c$
 $c \cos 40 = b$
 $c = \frac{b}{\cos 40} = 7.832$

$\angle A = 50^\circ$
 $\angle B = 40^\circ$
 $\angle C = 90^\circ$


$a = b$
 $b = 5.035$
 $c = 7.832$

39.  $3^2 + 5^2 = c^2$
 $\sqrt{34} = c = 5.831$

$\tan A = \frac{3}{5}$
 $\tan^{-1}(\frac{3}{5}) = A$
 $59.036^\circ = A$

$\angle A = 59.036^\circ$
 $\angle B = 30.964^\circ$
 $\angle C = 90^\circ$

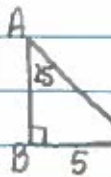
$a = 5$
 $b = 3$
 $c = \sqrt{34} =$

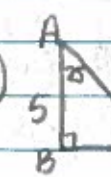
41.  $2^2 + b^2 = 5^2$
 $b^2 = 21$
 $b = 4.583$

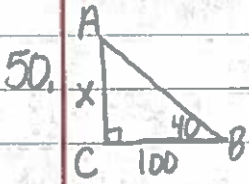
$\sin A = \frac{2}{5}$
 $\sin^{-1}(\frac{2}{5}) = A$
 $23.578^\circ = A$

$\angle A = 23.578^\circ$
 $\angle B = 66.422^\circ$
 $\angle C = 90^\circ$

$a = 2$
 $b = 4.583$
 $c = 5$

47.  a) $\sin 25 = \frac{5}{b}$
 $b \sin 25 = 5$
 $b = \frac{5}{\sin 25}$

 b) $\cos 25 = \frac{5}{b}$
 $b \cos 25 = 5$
 $b = \frac{5}{\cos 25}$



$$\tan 40 = \frac{x}{100}$$

$$100 \tan 40 = x$$

$$83.910 \text{ ft} = x$$