

1.  $\sqrt{20} = 2\sqrt{5}$

2.  $\sqrt{50} - \sqrt{32}$

$\sqrt{25 \cdot 2} \downarrow \sqrt{16 \cdot 2}$

$5\sqrt{2} - 4\sqrt{2} = \sqrt{2}$

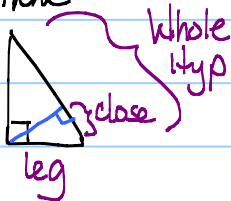
3.  $\sqrt{75} - \sqrt{27} + \sqrt{16} + \sqrt{8}$

$\sqrt{25 \cdot 3} \downarrow \sqrt{9 \cdot 3} \downarrow$

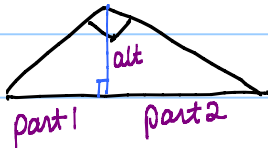
$5\sqrt{3} - 3\sqrt{3} + 4 + 2\sqrt{2} = 2\sqrt{3} + 4 + 2\sqrt{2}$

$4 + 2\sqrt{2} + 2\sqrt{3}$

\* Alt on Hyp Thm



$\Rightarrow \text{leg}^2 = \text{close} \cdot \text{whole}$



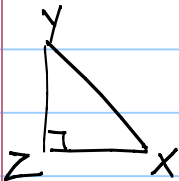
$\text{alt}^2 = (\text{part 1})(\text{part 2})$

\* SOH CAH TOA

$\sin X = \frac{O}{H}$

$\cos X = \frac{A}{H}$

$\tan A = \frac{O}{A}$



If  $\angle$  is unknown

$\sin A = \frac{1}{2}$

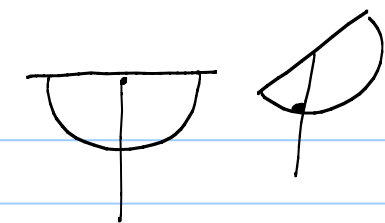
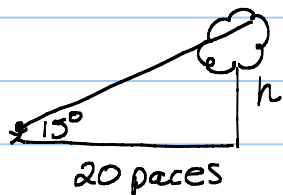
$A = \arcsin(1/2)$

$A = \sin^{-1}(1/2)$

$A = 30^\circ$

SOH  
CAH  
TOA

∠ of elevation



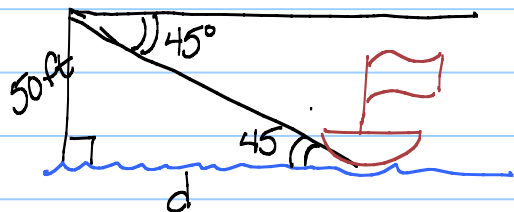
$$\tan 15^\circ = \frac{h}{20}$$

$$20 \tan 15^\circ = h \text{ paces}$$

✓ DEGREE MODE

$$h \approx 5.4 \text{ paces tall}$$

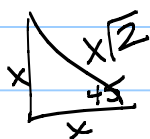
∠ of depression



$$\tan 45^\circ = \frac{50}{d}$$

$$d = \frac{50}{\tan 45}$$

$$d = 50$$



Families    3, 4, 5    7, 24, 25    9, 40, 41  
                  5, 12, 13    8, 15, 17

non-sfontig    30 60 90    &    45 45 90  
                  x x√3 2x            x x x√2

Reduced Δ Principle

(10, 24, —) 26  
 2(5, 12, 13)

$$5 \left( \begin{array}{c} 5, 10, \sqrt{5} \\ 1, 2, \sqrt{5} \end{array} \right) \quad 5\sqrt{5}$$
$$\sqrt{1^2 + 2^2} \quad \leftarrow \text{Pyth. Thm}$$
$$\sqrt{1+4}$$
$$\sqrt{5}$$

# Ch 9 Review

1.  $\sqrt{50} - \sqrt{32}$

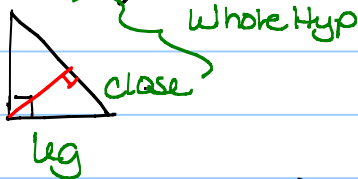
$$5\sqrt{2} - 4\sqrt{2} = \sqrt{2}$$

2.  $\sqrt{75} - \sqrt{27} + \sqrt{16} + \sqrt{8}$

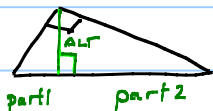
$$\sqrt{25}\sqrt{3} - \sqrt{9}\sqrt{3} + \sqrt{4}\sqrt{2}$$

$$5\sqrt{3} - 3\sqrt{3} + 4 + 2\sqrt{2} = 4 + 2\sqrt{2} + 2\sqrt{3}$$

\* Alt on Hyp



$$\text{leg}^2 = (\text{close part})(\text{whole hyp})$$



$$\text{alt}^2 = (\text{part 1})(\text{part 2})$$

\* SOH CAH TOA

$$\sin X = \frac{O}{H}$$

$$\cos X = \frac{A}{H}$$

$$\tan X = \frac{O}{A}$$

→ If  $\angle$  is unknown

$$\sin X = \frac{1}{2}$$

$$X = \arcsin\left(\frac{1}{2}\right)$$

$$X = \sin^{-1}\left(\frac{1}{2}\right)$$

# ✓ DEGREE MODE!



## Ch 9 Review

### RADICALS

1.  $\sqrt{50} - \sqrt{32}$

$$\sqrt{25} \sqrt{2} - \sqrt{16} \sqrt{2}$$

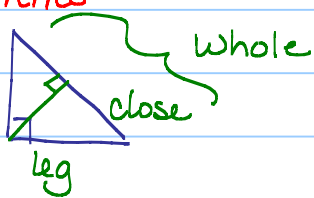
$$5\sqrt{2} - 4\sqrt{2} = \sqrt{2}$$

2.  $\sqrt{75} - \sqrt{27} + \sqrt{16} + \sqrt{8}$

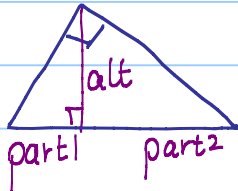
$$\sqrt{25} \sqrt{3} - \sqrt{9} \sqrt{3} + \sqrt{4} + \sqrt{4} \sqrt{2}$$

$$5\sqrt{3} - 3\sqrt{3} + 4 + 2\sqrt{2} = 4 + 2\sqrt{2} + 2\sqrt{3}$$

Alt on Hyp Thms

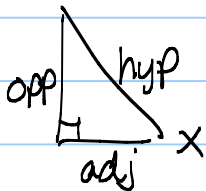


$$\text{leg}^2 = (\text{close})(\text{whole})$$



$$\text{alt}^2 = (\text{part 1})(\text{part 2})$$

Right  $\Delta$  Trig



\* SOH CAH TOA

$$\sin \angle X = \frac{\text{opp}}{\text{hyp}}$$

$$\cos \angle X = \frac{\text{adj}}{\text{hyp}}$$

$$\tan \angle X = \frac{\text{opp}}{\text{adj}}$$

If  $m\angle$  is unknown

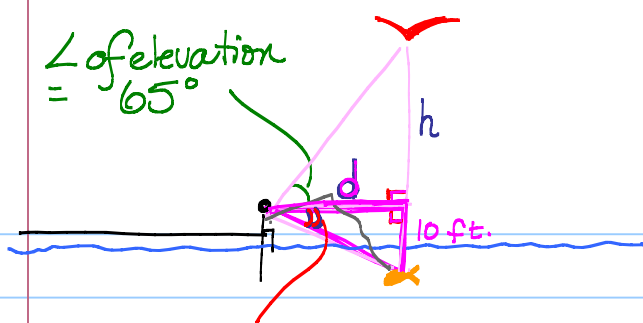
$$\sin A = \frac{1}{2}$$

$$A = \arcsin(1/2)$$

vocab.

$$A = \sin^{-1}(1/2)$$

calc



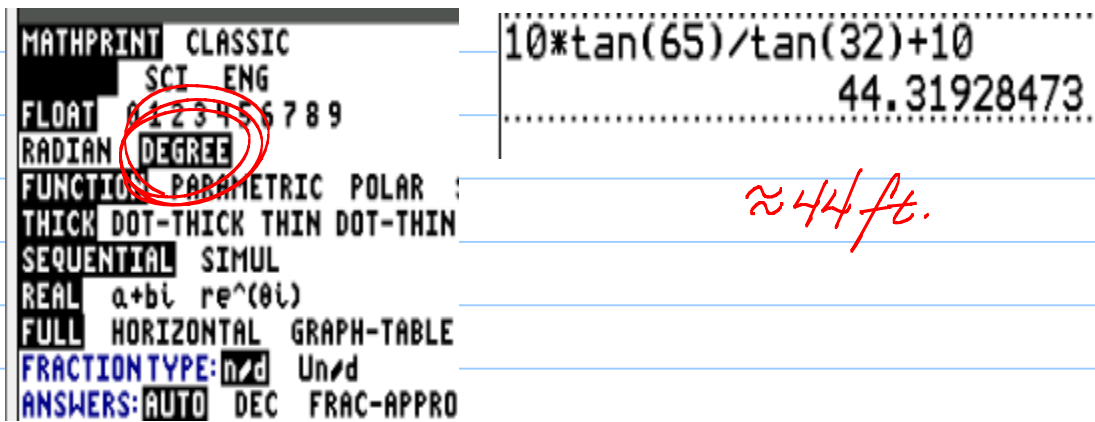
total bird to fish distance:  
 $h + 10$

$\angle$  of depression =  $32^\circ$

①  $\tan 32^\circ = \frac{10}{d} \rightarrow d \tan 32 = 10 \rightarrow d = \frac{10}{\tan 32^\circ}$

②  $\tan 65^\circ = \frac{h}{d} \rightarrow d \tan 65 = h$

$\frac{10 \cdot \tan 65}{\tan 32} + 10 = \text{dist betw}$   
 bird & fish



$\approx 44 \text{ ft.}$

\* Pyth Triples    3, 4, 5    7, 24, 25    9, 40, 41  
                          5, 12, 13    8, 15, 17

Spec  $\Delta \rightarrow$  TRIG    30    60    90     $\varnothing$     45    45    90  
                          x     $x\sqrt{3}$      $2x$        x    x     $x\sqrt{2}$

Reduced  $\Delta$  Principle     $(6, 8, 10) \rightarrow 2(3, 4, 5)$

$(5, 10, 5\sqrt{5})$

$5(1, 2, \_)$

pyth. thm     $\sqrt{1^2 + 2^2}$   
                           $\sqrt{5}$