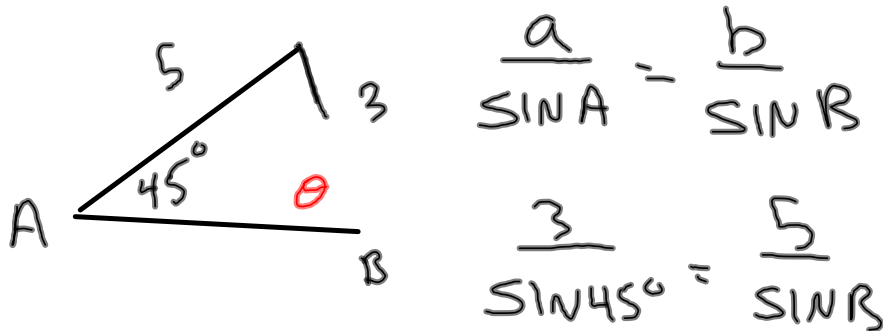


FEB 24/09

## AMBIGUOUS CASE

$$\angle A = 45^\circ \quad b = 5 \quad a = 3$$



$$\cancel{\frac{3}{3}} \sin B = \frac{5 \cdot \sin 45^\circ}{3}$$

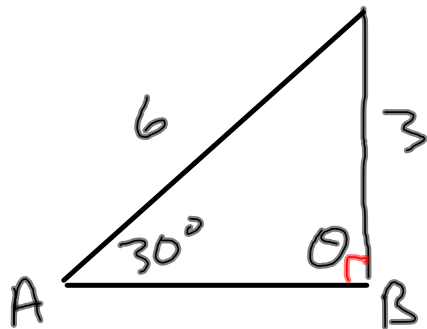
$$\sin B = 1.1785$$

$$\angle B = \sin^{-1}(1.1785)$$

$$\angle B = \text{ERROR}$$

NO SOLUTION NO TRIANGLE

$$\angle A = 30^\circ \quad b = 6 \quad a = 3$$



$$\frac{a}{\sin A} = \frac{b}{\sin B}$$

$$\frac{3}{\sin 30^\circ} = \frac{6}{\sin B}$$

$$\cancel{\frac{\sin B}{3}} = \frac{6 \cdot \sin 30^\circ}{3}$$

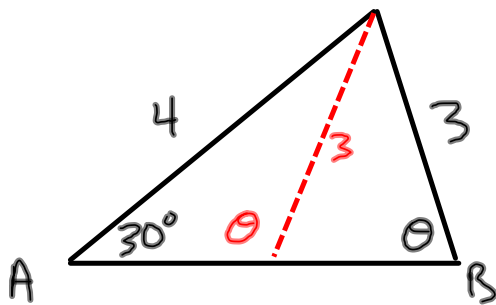
$$\sin B = 1$$

$$\angle B = \sin^{-1}(1)$$

$$\angle B = 90^\circ$$

RIGHT ANGLE TRIANGLE

$$\angle A = 30^\circ \quad a = 3 \quad b = 4$$



$$\frac{a}{\sin A} = \frac{b}{\sin B}$$

$$\frac{3}{\sin 30^\circ} = \frac{4}{\sin B}$$

$$\frac{\cancel{3} \sin B}{\cancel{3}} = \frac{4 \cdot \sin 30^\circ}{3}$$

$$\sin B = \frac{2}{3}$$

$$\angle B = \sin^{-1}\left(\frac{2}{3}\right)$$

$$\angle B = 41.8^\circ$$

$$\angle B = 180 - 41.8 = 138.2^\circ$$

2 TRIANGLES 2 ANGLES

## SUMMARY

3 POSSIBILITIES

IF  $\frac{b \sin A}{a} > 1$  NO SOLUTION

$\frac{b \sin A}{a} = 1$  RIGHT ANGLE  
TRIANGLE

$\frac{b \sin A}{a} < 1$  2 SOLUTIONS  
2 TRIANGLES

Ex #10

Q#1-4, 7-9, 13-15