

M
a
d
a
m
a
n
i
f
e
s
t
e
d
i
n
t
h
e
s
k
y

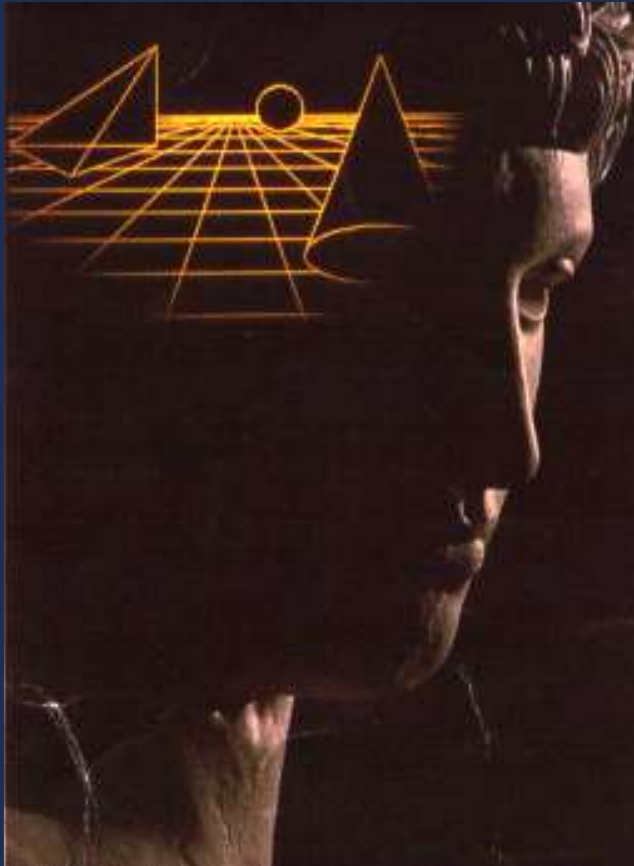
RIGHT TRIANGLE

TRIGONOMETRY

REACH FOR THE STARS
A.C.Pandey

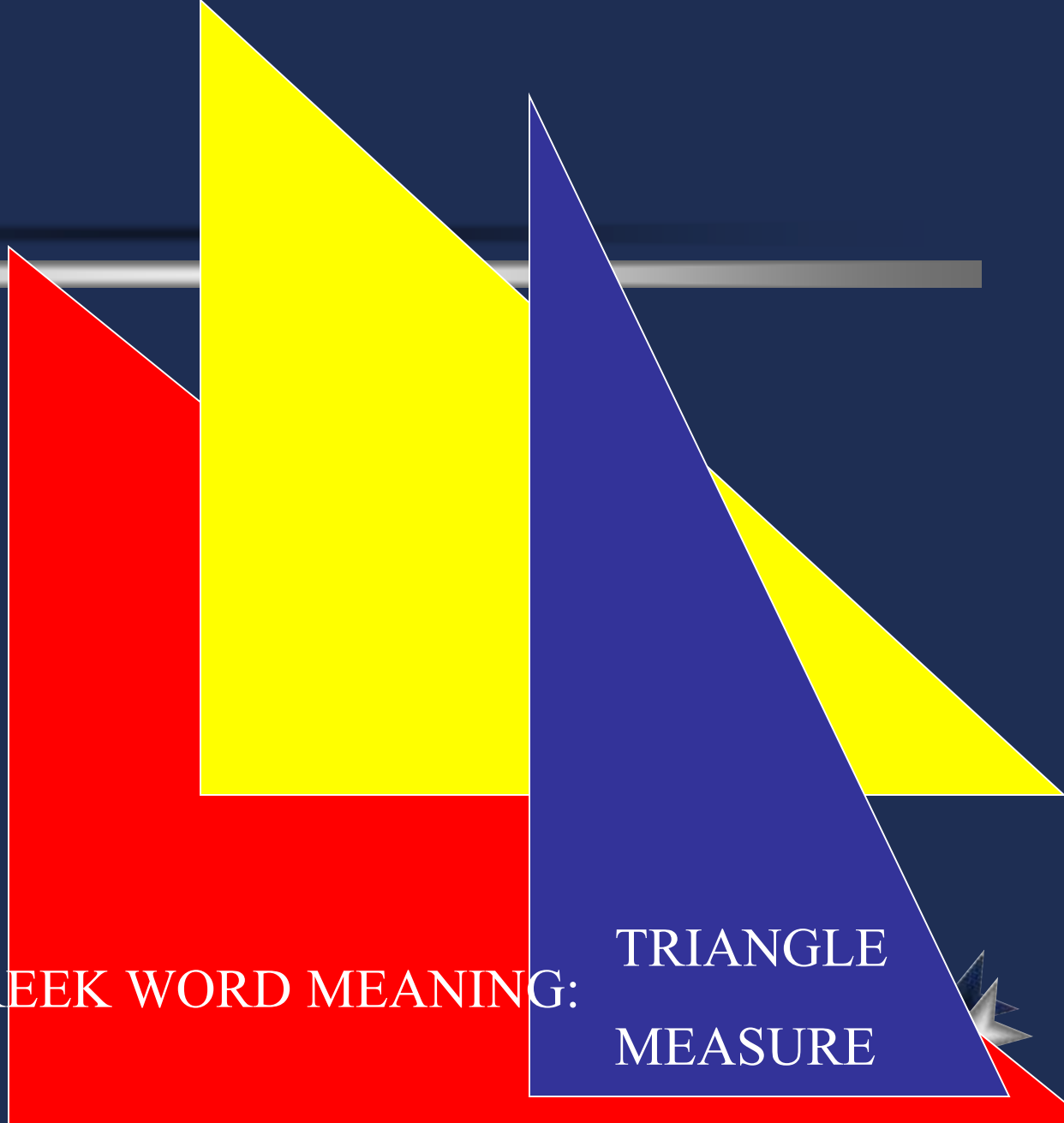
ANCIENT
GREEKS USED
TRIGONOMETRY
TO MEASURE
THE DISTANCE
TO THE STARS





*IN 140 B.C.
HIPPARCHUS
BEGAN TO USE
AND WRITE
TRIGONOMETRY*





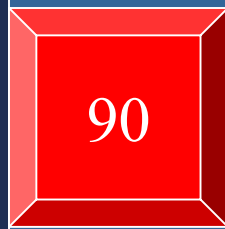
TRIGONOMETRY

GREEK WORD MEANING:

TRIANGLE
MEASURE

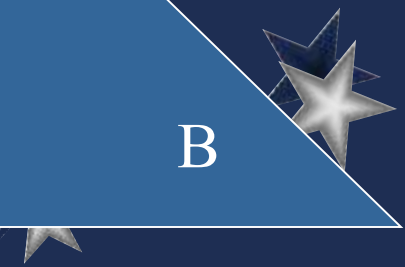
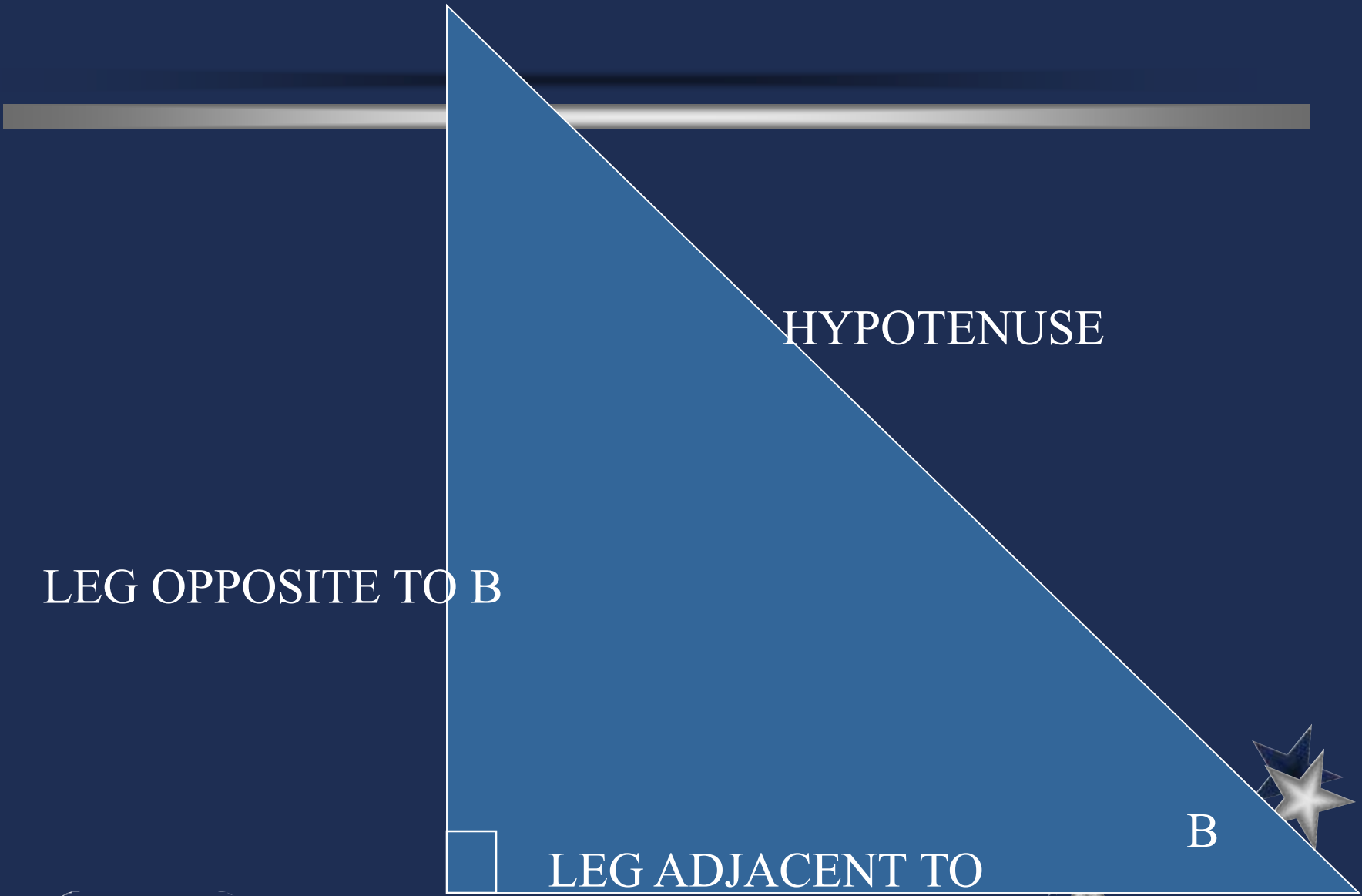


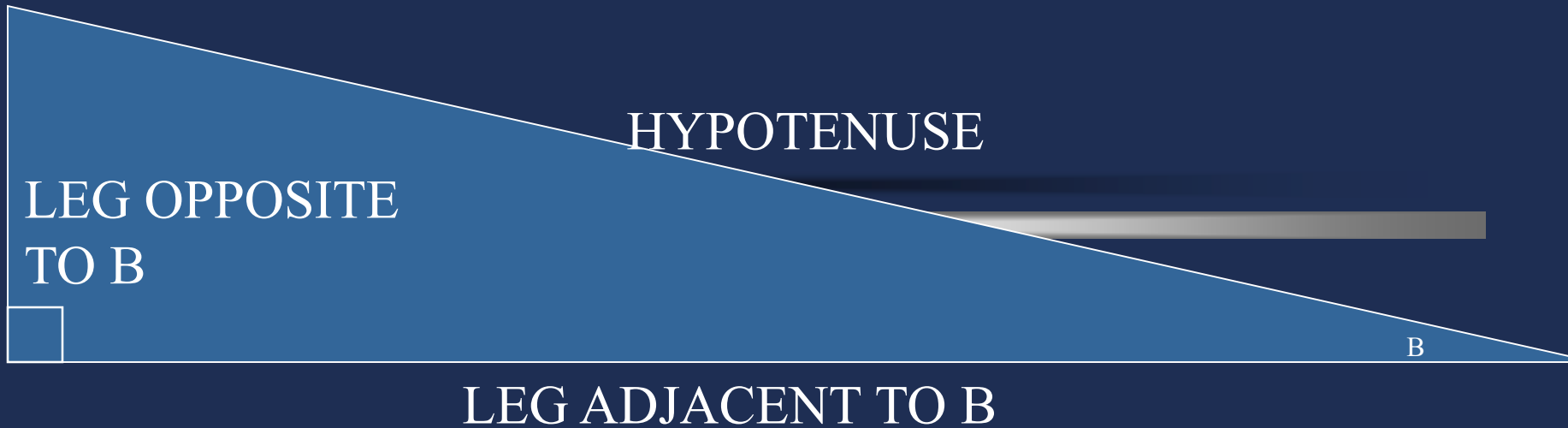
• WE WILL DEAL ONLY WITH RIGHT TRIANGLES



RIGHT TRIANGLES MUST HAVE A 90 DEGREE ANGLE

The bottom of the slide features several decorative elements: two white stars with blue outlines on the right side, and a white slider control with a black knob on the left side.





$$\text{SINE OF } B = \frac{\text{LENGTH OF LEG OPPOSITE } B}{\text{LENGTH OF HYPOTENUSE}}$$

$$\text{COSINE OF } B = \frac{\text{LENGTH OF LEG ADJACENT TO } B}{\text{LENGTH OF HYPOTENUSE}}$$

$$\text{TANGENT OF } B = \frac{\text{LENGTH OF LEG OPPOSITE } B}{\text{LENGTH OF LEG ADJACENT TO } B}$$



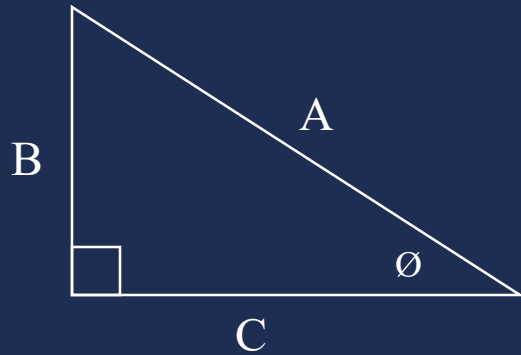
MISSION:

1. TO FIND VALUES OF TRIGONOMETRIC FUNCTIONS.
2. TO APPLY THE TRIGONOMETRIC FUNCTIONS TO SOLVE RIGHT -TRIANGLE PROBLEMS.



SAMPLE RIGHT TRIANGLE PROBLEMS

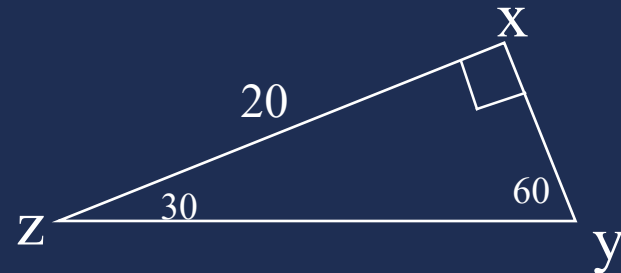
1.)



A.) $\sin \theta = \frac{B}{A}$

B.) $\cos \theta = \frac{C}{A}$

C.) $\tan \theta = \frac{B}{C}$



Find the values to the nearest tenth of:

A.) $\overline{XY} = \underline{11.5}$

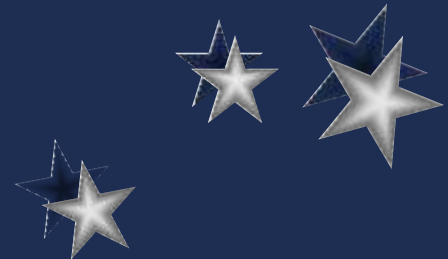
B.) $\overline{YZ} = \underline{23.1}$



APPLICATIONS:



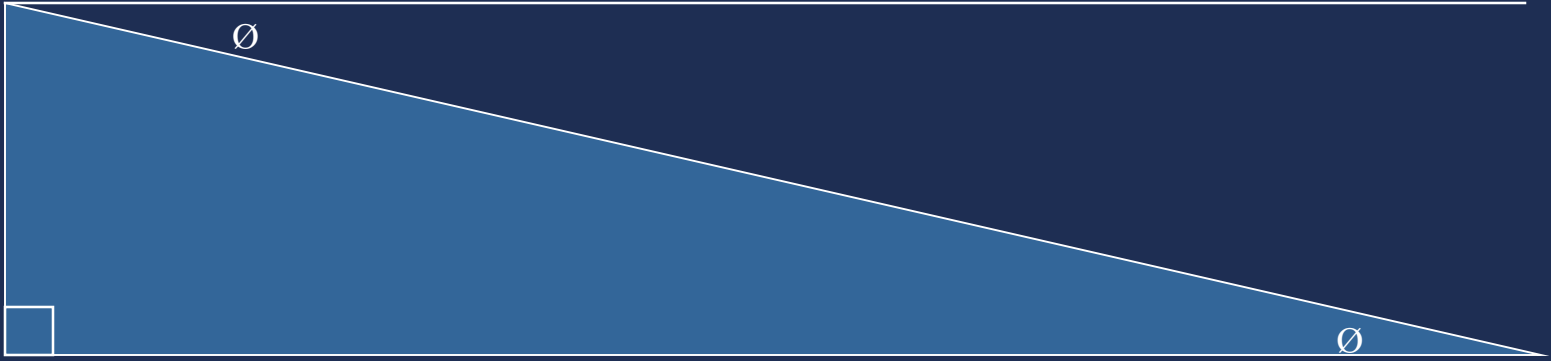
To avoid a steep descent, a plane flying at 30,000 ft. starts its descent 130 miles away from the airport. For the angle of descent θ , to be constant, at what angle should the plane descend?



$$\tan \emptyset = \frac{30,000}{5,280 * 130}$$



30,000 ft.



130 Miles

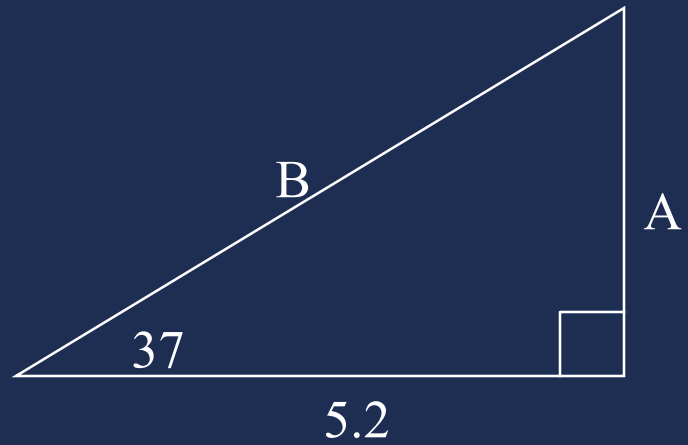


An observer 5.2 km from a launch pad observes a rocket ascending.



- A. At a particular time the angle of elevation is 37 degrees. How high is the rocket?
- B. How far is the observer from the rocket?
- C. What will the angle of elevation be when the rocket reaches 30 km?





A. $\text{Tan } 37 = \frac{A}{5.2}$

B. $\text{Cos } 37 = \frac{5.2}{B}$

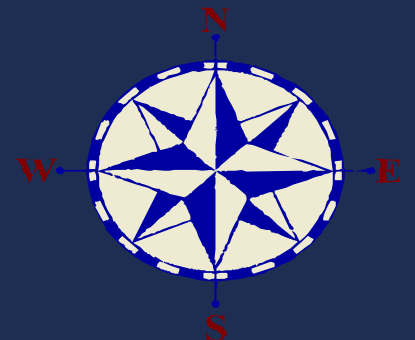
C. $\text{Tan } \emptyset = \frac{30}{5.2}$





A ship sails 340 kilometers on a bearing of 75 degrees.

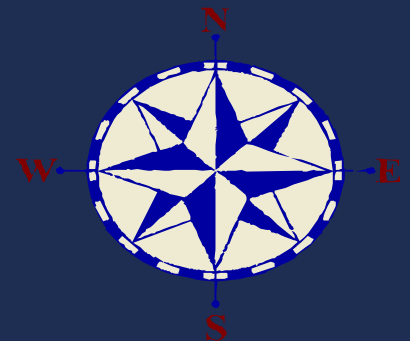
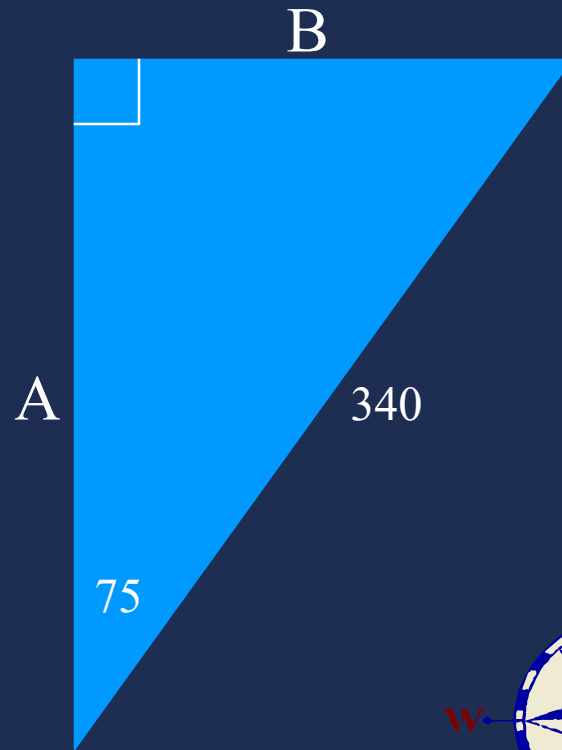
- A. How far north of its original position is the ship?
- B. How far east of its original position is the ship?





A. $\text{Cos } 75 = \frac{\underline{\text{A}}}{340}$

B. $\text{Sin } 75 = \frac{\underline{\text{B}}}{340}$



BY THE STUDY OF TRIGONOMETRY-----

YOU TOO COULD REACH FOR THE STARS!!!!!!!!!!!!!!

BE A ROCKET!!!!!!!

REACH FOR THE STARS!



BY THE STUDY OF TRIGONOMETRY-----

YOU TOO COULD REACH FOR THE STARS!!!!!!!!!!!!!!



BE A ROCKET!!!!!!!!!!

REACH FOR THE STARS!

