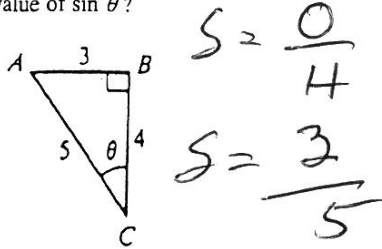




7/24/25  
Right L  
triple

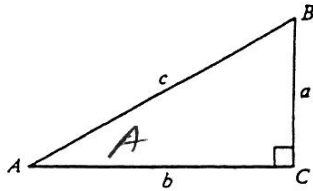
1. In the figure below,  $\angle B$  is a right angle, and the measure of  $\angle C$  is  $\theta$ . What is the value of  $\sin \theta$ ?

- A.  $\frac{3}{5}$   
B.  $\frac{4}{5}$   
C.  $\frac{5}{4}$   
D.  $\frac{4}{3}$   
E.  $\frac{5}{3}$



2. In the figure below,  $\triangle ABC$  is a right triangle, and  $a$ ,  $b$ , and  $c$  indicate the lengths of the sides of the triangle. What is the cosine of  $\angle A$ ?

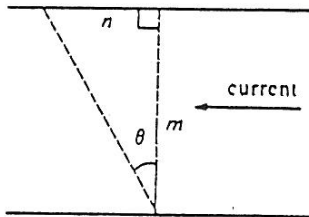
- F.  $\frac{a}{c}$   
G.  $\frac{b}{a}$   
H.  $\frac{b}{c}$   
J.  $\frac{c}{a}$   
K.  $\frac{c}{b}$



$\cos = \frac{A}{H}$   
 $\cos = \frac{b}{c}$

3. The distance across a river is  $m$  feet. The current forces a boat being rowed straight across the river to move at a resulting constant angle  $\theta$  so that the landing point is  $n$  feet downstream. Which of the following relates  $m$ ,  $n$ , and  $\theta$ ?

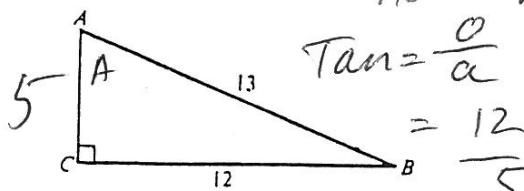
- A.  $\tan \theta = \frac{n}{m}$   
B.  $\tan \theta = \frac{m}{n}$   
C.  $\tan \theta = \frac{n}{\sqrt{m^2 + n^2}}$   
D.  $\tan \theta = \frac{m}{\sqrt{m^2 + n^2}}$   
E.  $\tan \theta = \frac{\sqrt{m^2 + n^2}}{m}$



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

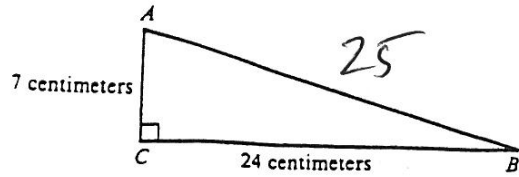
4. In the right triangle below, the length of  $\overline{AB}$  is 13 units and the length of  $\overline{CB}$  is 12 units. What is the tangent of  $\angle A$ ?

- A.  $\frac{12}{5}$   
B.  $\frac{13}{12}$   
C.  $\frac{12}{13}$   
D.  $\frac{5}{12}$   
E.  $\frac{5}{13}$



$5/12/13$  Triple  
 $\tan = \frac{O}{A} = \frac{12}{5}$

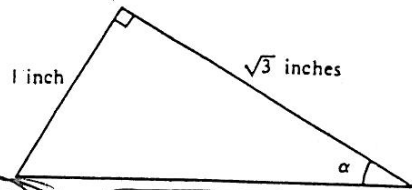
5. In right triangle  $\triangle ABC$  below, what is the  $\sin$  of  $\angle A$ ?



- A.  $\frac{7}{24}$   
B.  $\frac{7}{25}$   
C.  $\frac{24}{7}$   
D.  $\frac{24}{25}$   
E.  $\frac{25}{24}$

$\sin = \frac{O}{H}$   
 $\sin = \frac{24}{25}$

6. What is the value of  $\sin \alpha$  in the right triangle below?

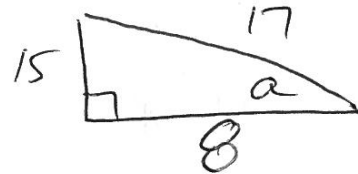


- A.  $\frac{1}{2}$   
B.  $\frac{\sqrt{3}}{2}$   
C.  $\frac{2}{\sqrt{3}}$   
D.  $\sqrt{3}$   
E. 2

$\sqrt{1^2 + (\sqrt{3})^2} = \sqrt{4} = 2$   
 $\sin \alpha = \frac{O}{H} = \frac{1}{2}$

7. In right triangle  $ABC$ , the  $\sin$  of  $\angle A$  is  $\frac{15}{17}$ . What is the cosine of  $\angle A$ ?

- F.  $\frac{17}{8}$   
G.  $\frac{15}{8}$   
H.  $\frac{17}{15}$   
J.  $\frac{8}{15}$   
K.  $\frac{8}{17}$

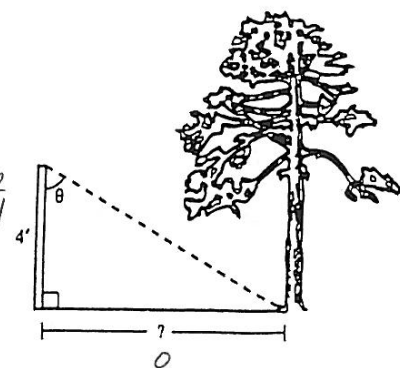


$\cos = \frac{A}{H} = \frac{8}{17}$

8/15/17 Triple

8. Deanna peeks over the top of a fence post at a tree. The post is 4 feet high. If she is looking down at an angle of  $\theta$  degrees as shown below, what is the distance from the bottom of the post to the tree?

- E.  $4 \tan \theta$   
G.  $4 \sec \theta$   
H.  $4 \cos \theta$   
J.  $4 \sin \theta$   
K.  $4 \csc \theta$

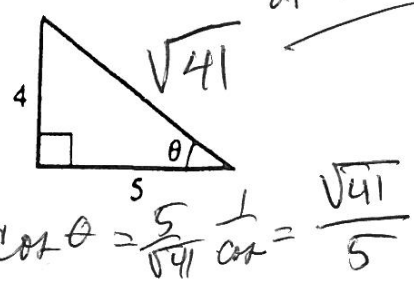


$\tan = \frac{O}{A} = \frac{4}{x}$   
 $\tan \theta \cdot x = 4$

ACT TRIGONOMETRY WORKSHEET II

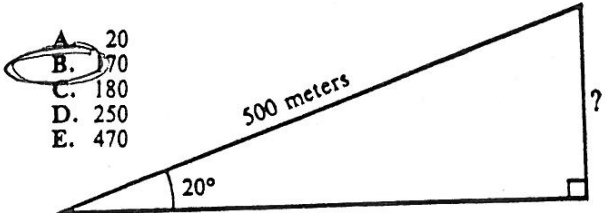
9. Given the diagram below, what is  $\frac{1}{\cos \theta}$ ? *1/cos is reciprocal of cos*

- F.  $\frac{4}{\sqrt{41}}$
- G.  $\frac{5}{\sqrt{41}}$
- H.  $\frac{5}{4}$
- J.  $\frac{\sqrt{41}}{4}$
- K.  $\frac{\sqrt{41}}{5}$



10. The hiking path to the top of a mountain makes at the steepest place, an angle of  $20^\circ$  with the horizontal, and it maintains this constant slope for 500 meters, as illustrated below. Which of the following is the closest approximation to the change in elevation, in meters, over this 500-meter section?

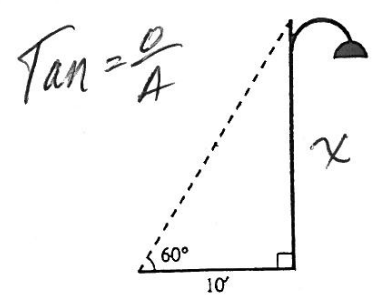
(Note: You may use the following values, which are correct to 2 decimal places:  $\cos 20^\circ \sim .94$ ;  $\sin 20^\circ \sim .34$ ;  $\tan 20^\circ \sim .36$ )



$\sin = \frac{o}{h}$   $\sin 20^\circ = \frac{o}{500}$   
 $0.34 = \frac{o}{500}$   $o = 170$

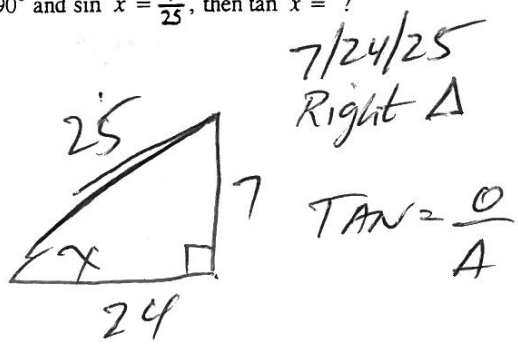
11. A lamppost, shown below, casts a 10-foot shadow when the sun is at a  $60^\circ$  angle which the ground. Which of the following equations gives the height  $x$ , in feet, of the lamppost?

- F.  $\cos 60^\circ = \frac{x}{10}$
- G.  $\cot 60^\circ = \frac{x}{10}$
- H.  $\sec 60^\circ = \frac{x}{10}$
- J.  $\sin 60^\circ = \frac{x}{10}$
- K.  $\tan 60^\circ = \frac{x}{10}$



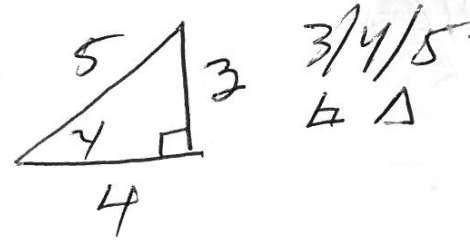
12. If  $0^\circ \leq x \leq 90^\circ$  and  $\sin x = \frac{7}{25}$ , then  $\tan x = ?$

- A.  $\frac{7}{24}$
- B.  $\frac{24}{25}$
- C.  $\frac{25}{24}$
- D.  $\frac{24}{7}$
- E.  $\frac{25}{7}$



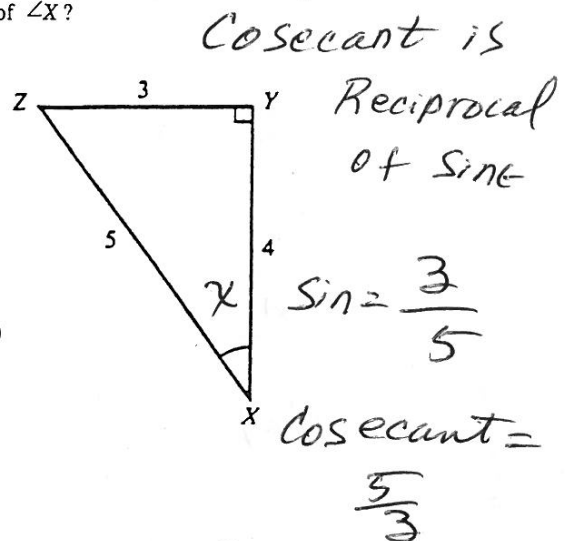
13. What is the value of  $\cos \gamma$  if  $\sin \gamma = \frac{3}{5}$  and  $\cos \gamma > 0$ ?

- A.  $\frac{2}{5}$
- B.  $\frac{3}{5}$
- C.  $\frac{4}{5}$
- D.  $\frac{5}{4}$
- E.  $\frac{5}{3}$



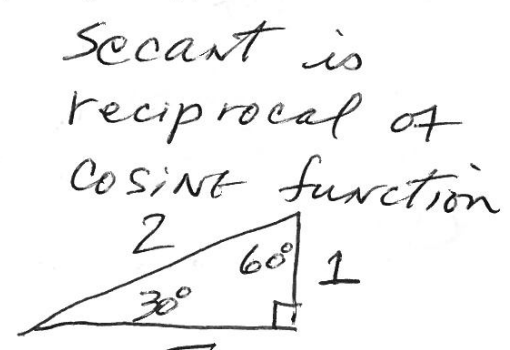
14. In the right triangle below, distances are given in feet. What is the cosecant of  $\angle X$ ?

- F.  $\frac{3}{5}$
- G.  $\frac{4}{5}$
- H.  $\frac{5}{4}$
- J.  $\frac{4}{3}$
- K.  $\frac{5}{3}$



15. For a  $60^\circ$  angle, the tangent is  $\sqrt{3}$ . What is the secant of this angle?

- A.  $\frac{1}{2}$
- B.  $1 + \sqrt{3}$
- C. 2
- D. 3
- E.  $2\sqrt{3}$



$\cos 60^\circ = \frac{1}{2}$   $\secant = \frac{2}{1}$

16. If the sine of an angle is 0.8 and its cosine is 0.6, what is its cotangent?

- F.  $\frac{5}{3}$
- G.  $\frac{4}{3}$
- H.  $\frac{3}{4}$
- J.  $\frac{1}{5}$
- K.  $\frac{5}{4}$

