

1. If  $\sin A = \frac{7}{25}$  and  $0^\circ < A < 90^\circ$ , then what are all the possible values of  $\tan A$ ?

A.  $\frac{18}{25}$  only

B.  $\frac{7}{24}$  and  $\frac{24}{25}$

C.  $\frac{7}{24}$  only

D.  $\frac{7}{25}$  only

E. None

2. If  $\tan A = \frac{3}{10}$  and  $90^\circ < A < 360^\circ$ , then what are all the possible values of  $\cos A$ ?

A.  $-\frac{3}{\sqrt{109}}$  only

B.  $-\frac{3}{\sqrt{109}}$  and  $\frac{3}{\sqrt{109}}$

C.  $-\frac{10}{\sqrt{109}}$  only

D.  $-\frac{10}{\sqrt{109}}$  and  $\frac{10}{\sqrt{109}}$

E.  $-\frac{3}{10}$  and  $\frac{3}{10}$

3. If  $\sin \theta = x$  and  $\cos \theta = y$ , then what does  $\tan \theta$  equal in terms of  $x$  and  $y$ ?

A.  $x$

B.  $y$

C.  $\frac{x}{y}$

D.  $\sqrt{x^2 - y^2}$

E.  $\sqrt{x^2 + y^2}$

4. In  $\triangle ABC$ ,  $\sin B = \frac{5}{13}$ ,  $\angle C = 90^\circ$ , and the length of  $\overline{AC}$  is 35. What is the length of  $\overline{AB}$ ?
- A. 12  
 B. 13  
 C. 48  
 D. 84  
 E. 91
5. In  $\triangle DEF$ ,  $\tan D = \frac{3}{4}$ ,  $\angle F = 90^\circ$ , and the length of  $\overline{EF}$  is 30. What is the length of  $\overline{DE}$ ?
- A. 55  
 B. 50  
 C. 37.5  
 D. 25  
 E. 5
6. If  $\cos \theta = \frac{3}{8}$  and  $\tan \theta < 0$ , then  $\sin \theta =$
- A.  $\frac{5}{8}$   
 B.  $\frac{\sqrt{55}}{8}$   
 C.  $-\frac{\sqrt{55}}{8}$   
 D.  $\frac{\sqrt{5}}{8}$   
 E.  $-\frac{\sqrt{5}}{8}$
7. For an angle with measure  $\phi$  in a right triangle,  $\sin \phi = \frac{14}{50}$  and  $\tan \phi = \frac{14}{48}$ . What is the value of  $\cos \phi$ ?
- A.  $\frac{48}{50}$   
 B.  $\frac{50}{48}$   
 C.  $\frac{14}{50}$   
 D.  $\frac{48}{14}$   
 E.  $\frac{14}{48}$

8. For an angle with measure  $\tau$  in a right triangle,  $\tan \tau = 2$  and  $\sin \tau = \frac{2\sqrt{5}}{5}$ . What is the value of  $\cos \tau$ ?

A.  $\frac{\sqrt{5}}{5}$   
B.  $\frac{1}{5}$   
C.  $\frac{1}{3}$   
D.  $\frac{1}{2}$   
E.  $2\sqrt{5}$

### CHALLENGE QUESTIONS

9. Jon Snow stands at the top of the Wall 600 feet above the ground. He leans over the Wall and shoots an arrow into the ground. The arrow hits at an angle of  $25^\circ$  with respect to the ground. If his arrow traveled a straight line path, approximately how far did his arrow travel?
- A. 254 ft  
B. 662 ft  
C. 1287 ft  
D. 1420 ft  
E. 2020 ft
10. Sides  $\overline{AB}$  and  $\overline{BC}$  are legs of a right triangle.  $\overline{AB}$  is 5 less than twice as long as  $\overline{BC}$ . If hypotenuse  $AC = \sqrt{10}$ , what is  $\cos A$ ?
- A.  $\frac{1}{\sqrt{10}}$   
B.  $-\frac{3}{\sqrt{10}}$   
C.  $\frac{3}{\sqrt{10}}$   
D.  $\frac{1}{2}$   
E. 5

## Answer Key

Video solutions for individual problems can be found at the link provided after each answer.

Video solutions for this and all other worksheets can be found here: <http://rprep.co/solutions>

<u>ANSWER</u>	<u>VIDEO SOLUTION</u>
1) C	<a href="http://rprep.co/1">http://rprep.co/1</a>
2) C	<a href="http://rprep.co/2">http://rprep.co/2</a>
3) C	<a href="http://rprep.co/3">http://rprep.co/3</a>
4) E	<a href="http://rprep.co/4">http://rprep.co/4</a>
5) B	<a href="http://rprep.co/5">http://rprep.co/5</a>
6) C	<a href="http://rprep.co/6">http://rprep.co/6</a>
7) A	<a href="http://rprep.co/7">http://rprep.co/7</a>
8) A	<a href="http://rprep.co/8">http://rprep.co/8</a>
9) D	<a href="http://rprep.co/9">http://rprep.co/9</a>
10) A	<a href="http://rprep.co/10">http://rprep.co/10</a>