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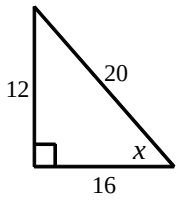
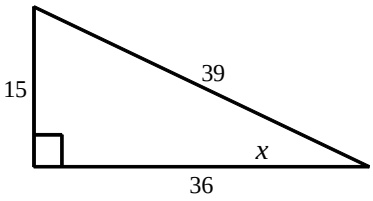
P.I. A.A.42: Find the sine, cosine, and tangent ratios of an angle of a right triangle, given the lengths of the sides

1. Use the diagram to find cos *x* as a fraction in simplest form. [A] $\frac{4}{5}$ [B] $\frac{3}{5}$ [C] $\frac{3}{4}$ [D] $1\frac{1}{3}$

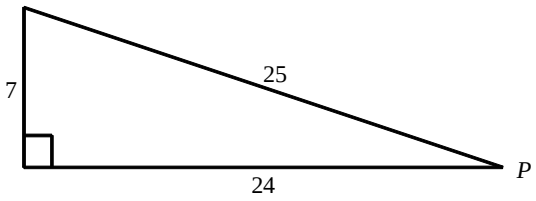


2. Use the diagram to find the tan *x* as a fraction in simplest form.

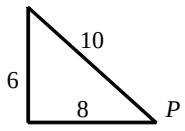


[A] $\frac{5}{13}$ [B] $\frac{5}{12}$ [C] $\frac{12}{13}$ [D] $2\frac{2}{5}$

3. Find sin *P*.



4. Find tan *P*.



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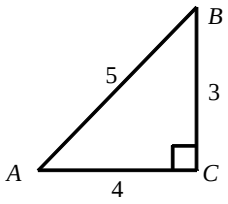
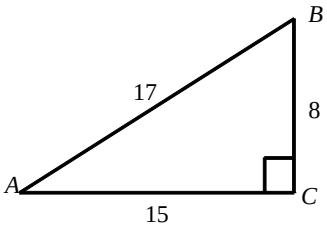
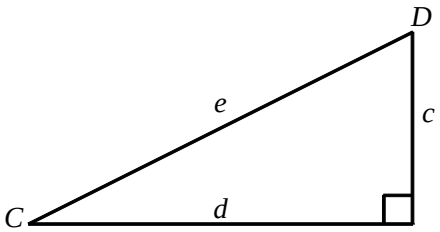
5. Find sin A for the right triangle below:



6. Find cos B for the right triangle below:



7. Write a ratio for tan D.



8. ΔXYZ is a right triangle with a right angle at Y. Which of the following is true?

[A] $\cos Z = \frac{XY}{XZ}$ [B] $\sin X = \frac{YZ}{XZ}$ [C] $\sin X = \frac{XY}{XZ}$ [D] $\tan X = \frac{XY}{ZY}$ [E] $\sin Z = \frac{YZ}{XZ}$

9. Graph points $A(1, 1)$, $B(5, 3)$, and $C(7, -1)$. What kind of triangle is ΔABC? Find sin A and sin C.

10. A line segment has endpoints $A(-4, 2)$ and $B(0, 6)$. $\overline{AB}$ is reflected in the y-axis. Find the sine of $\angle A$ in $\Delta ABA'$.

[1] A

[2] B

[3] $\frac{7}{25}$

[4] $\tan P = \frac{3}{4}$

[5] $\frac{3}{5}$

[6] $\frac{8}{17}$

[7] $\frac{d}{c}$

[8] B

[9] $\sin A = \sin C = 0.7071$. It is an isosceles right triangle.

[10] $\frac{\sqrt{2}}{2}$ or 0.7071