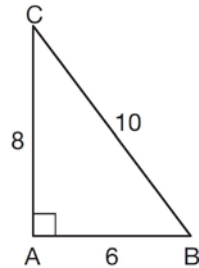


A.A.42: Trigonometric Ratios 1: Find the sine, cosine, and tangent ratios of an angle of a right triangle, given the lengths of the sides

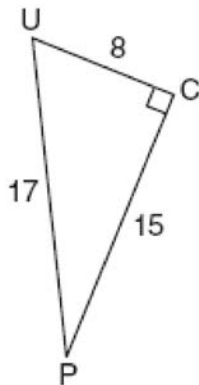
- 1 In $\triangle ABC$ below, the measure of $\angle A = 90^\circ$, $AB = 6$, $AC = 8$, and $BC = 10$.



Which ratio represents the sine of $\angle B$?

- 1) $\frac{10}{8}$
- 2) $\frac{8}{6}$
- 3) $\frac{6}{10}$
- 4) $\frac{8}{10}$

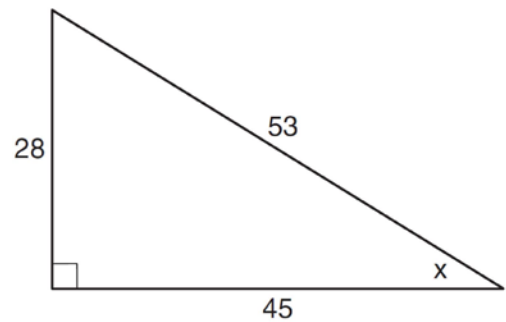
- 2 The diagram below shows right triangle UPC .



Which ratio represents the sine of $\angle U$?

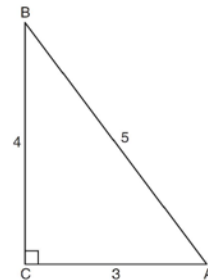
- 1) $\frac{15}{8}$
- 2) $\frac{15}{17}$
- 3) $\frac{8}{15}$
- 4) $\frac{8}{17}$

- 3 Which ratio represents $\sin x$ in the right triangle shown below?



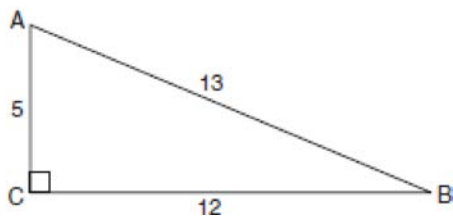
- 1) $\frac{28}{53}$
- 2) $\frac{28}{45}$
- 3) $\frac{45}{53}$
- 4) $\frac{53}{28}$

- 4 Which ratio represents the cosine of angle A in the right triangle below?



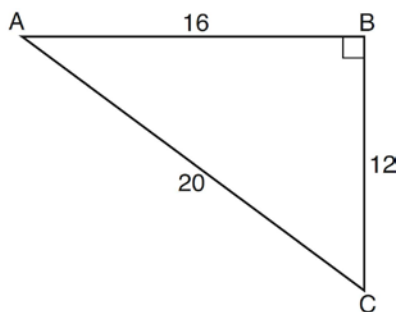
- 1) $\frac{3}{5}$
- 2) $\frac{5}{3}$
- 3) $\frac{4}{5}$
- 4) $\frac{4}{3}$

- 5 Which ratio represents $\cos A$ in the accompanying diagram of $\triangle ABC$?



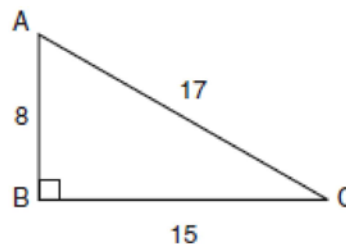
- 1) $\frac{5}{13}$
- 2) $\frac{12}{13}$
- 3) $\frac{12}{5}$
- 4) $\frac{13}{5}$

- 6 In right triangle ABC shown below, what is the value of $\cos A$?



- 1) $\frac{12}{20}$
- 2) $\frac{16}{20}$
- 3) $\frac{20}{12}$
- 4) $\frac{20}{16}$

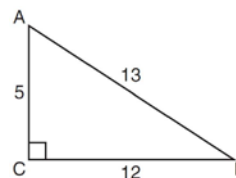
- 7 In the accompanying diagram of right triangle ABC , $AB = 8$, $BC = 15$, $AC = 17$, and $m\angle ABC = 90^\circ$.



What is $\tan \angle C$?

- 1) $\frac{8}{15}$
- 2) $\frac{17}{15}$
- 3) $\frac{8}{17}$
- 4) $\frac{15}{17}$

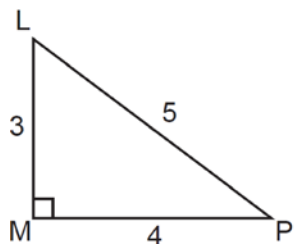
- 8 The diagram below shows right triangle ABC .



Which ratio represents the tangent of $\angle ABC$?

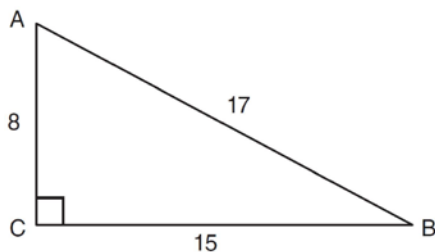
- 1) $\frac{5}{13}$
- 2) $\frac{5}{12}$
- 3) $\frac{12}{13}$
- 4) $\frac{12}{5}$

- 9 The diagram below shows right triangle LMP .



Which ratio represents the tangent of $\angle PLM$?

- 1) $\frac{3}{4}$
 - 2) $\frac{3}{5}$
 - 3) $\frac{4}{3}$
 - 4) $\frac{5}{4}$
- 10 Right triangle ABC has legs of 8 and 15 and a hypotenuse of 17, as shown in the diagram below.



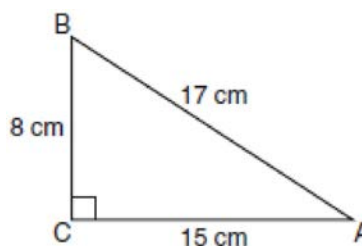
The value of the tangent of $\angle B$ is

- 1) 0.4706
 - 2) 0.5333
 - 3) 0.8824
 - 4) 1.8750
- 11 In triangle MCT , the measure of $\angle T = 90^\circ$, $MC = 85$ cm, $CT = 84$ cm, and $TM = 13$ cm. Which ratio represents the sine of $\angle C$?
- 1) $\frac{13}{85}$
 - 2) $\frac{84}{85}$
 - 3) $\frac{13}{84}$
 - 4) $\frac{84}{13}$

- 12 In $\triangle ABC$, the measure of $\angle B = 90^\circ$, $AC = 50$, $AB = 48$, and $BC = 14$. Which ratio represents the tangent of $\angle A$?

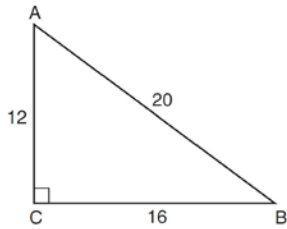
- 1) $\frac{14}{50}$
- 2) $\frac{14}{48}$
- 3) $\frac{48}{50}$
- 4) $\frac{48}{14}$

- 13 Which equation shows a correct trigonometric ratio for angle A in the right triangle below?



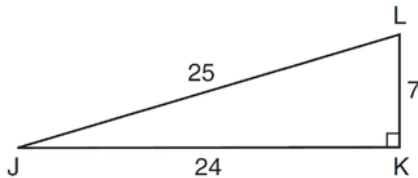
- 1) $\sin A = \frac{15}{17}$
- 2) $\tan A = \frac{8}{17}$
- 3) $\cos A = \frac{15}{17}$
- 4) $\tan A = \frac{5}{8}$

- 14 In right triangle ABC shown below, $AC = 12$, $BC = 16$, and $AB = 20$.



Which equation is *not* correct?

- 1) $\cos A = \frac{12}{20}$
 - 2) $\tan A = \frac{16}{12}$
 - 3) $\sin B = \frac{12}{20}$
 - 4) $\tan B = \frac{16}{20}$
- 15 In right triangle JKL in the diagram below, $KL = 7$, $JK = 24$, $JL = 25$, and $\angle K = 90^\circ$.



Which statement is *not* true?

- 1) $\tan L = \frac{24}{7}$
- 2) $\cos L = \frac{24}{25}$
- 3) $\tan J = \frac{7}{24}$
- 4) $\sin J = \frac{7}{25}$

- 16 In $\triangle ABC$, $m\angle C = 90$. If $AB = 5$ and $AC = 4$, which statement is *not* true?

- 1) $\cos A = \frac{4}{5}$
- 2) $\tan A = \frac{3}{4}$
- 3) $\sin B = \frac{4}{5}$
- 4) $\tan B = \frac{5}{3}$

A.A.42: Trigonometric Ratios 1: Find the sine, cosine, and tangent ratios of an angle of a right triangle, given the lengths of the sides

Answer Section

1 ANS: 4

$$\sin B = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{8}{10}$$

REF: 011518ia

2 ANS: 2

$$\sin U = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{15}{17}$$

REF: 010919ia

3 ANS: 1

$$\sin x = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{28}{53}$$

REF: 011008ia

4 ANS: 1

$$\cos A = \frac{\text{adjacent}}{\text{hypotenuse}} = \frac{3}{5}$$

REF: 081329ia

5 ANS: 1

$$\cos A = \frac{\text{adjacent}}{\text{hypotenuse}} = \frac{5}{13}$$

REF: 080414a

6 ANS: 2

$$\cos x = \frac{\text{adjacent}}{\text{hypotenuse}} = \frac{16}{20}$$

REF: 011307ia

7 ANS: 1

$$\tan C = \frac{\text{opposite}}{\text{adjacent}} = \frac{8}{15}$$

REF: 010316a

8 ANS: 2

$$\tan ABC = \frac{\text{opposite}}{\text{adjacent}} = \frac{5}{12}$$

REF: 081112ia

9 ANS: 3

$$\tan PLM = \frac{\text{opposite}}{\text{adjacent}} = \frac{4}{3}$$

REF: 011226ia

10 ANS: 2

$$\tan B = \frac{\text{opposite}}{\text{adjacent}} = \frac{8}{15} = 0.5\bar{3}$$

REF: 081026ia

11 ANS: 1

$$\sin C = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{13}{85}$$

REF: fall0721ia

12 ANS: 2

$$\tan A = \frac{\text{opposite}}{\text{adjacent}} = \frac{14}{48}$$

REF: 061009ia

13 ANS: 3

$$\cos A = \frac{\text{adjacent}}{\text{hypotenuse}} = \frac{15}{17}$$

REF: 011008ia

14 ANS: 4 REF: 061417ia

15 ANS: 2 REF: 081418ia

16 ANS: 4

If $m\angle C = 90$, then \overline{AB} is the hypotenuse, and the triangle is a 3-4-5 triangle.

REF: 061224ia