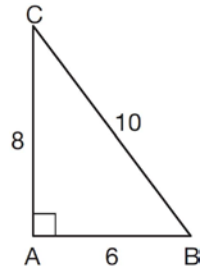


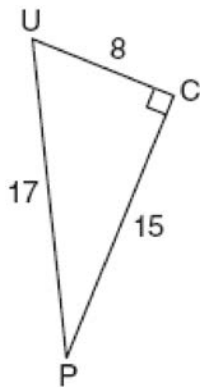
**A.A.42: Trigonometric Ratios 2: Find the sine, cosine, and tangent ratios of an angle of a right triangle, given the lengths of the sides**

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



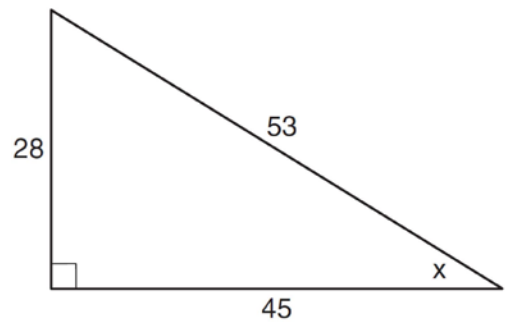
Which ratio represents the sine of  $\angle B$ ?

- 2 The diagram below shows right triangle  $UPC$ .

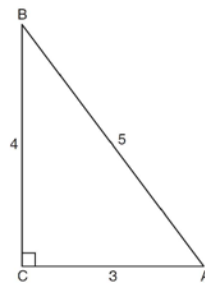


Which ratio represents the sine of  $\angle U$ ?

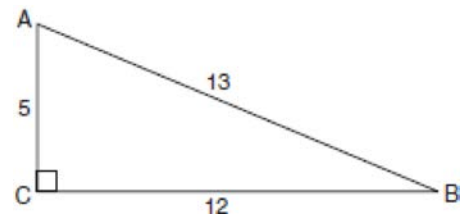
- 3 Which ratio represents  $\sin x$  in the right triangle shown below?



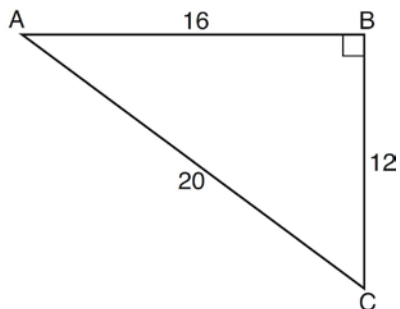
- 4 Which ratio represents the cosine of angle A in the right triangle below?



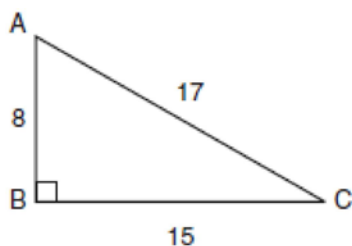
- 5 Which ratio represents  $\cos A$  in the accompanying diagram of  $\triangle ABC$ ?



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

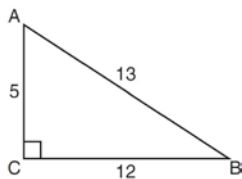


- 7 In the accompanying diagram of right triangle  $ABC$ ,  $AB = 8$ ,  $BC = 15$ ,  $AC = 17$ , and  $m\angle ABC = 90^\circ$ .



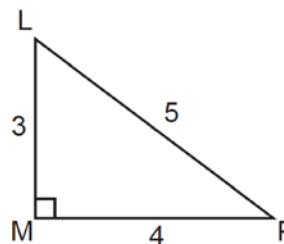
What is  $\tan \angle C$ ?

- 8 The diagram below shows right triangle  $ABC$ .



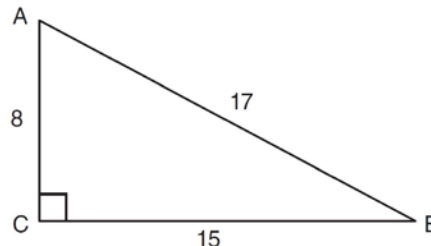
Which ratio represents the tangent of  $\angle ABC$ ?

- 9 The diagram below shows right triangle  $LMP$ .



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

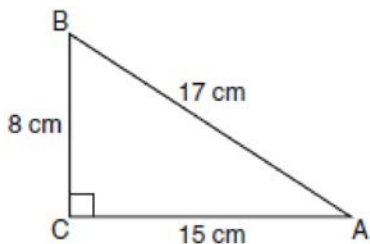
- 10 Right triangle  $ABC$  has legs of 8 and 15 and a hypotenuse of 17, as shown in the diagram below.



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

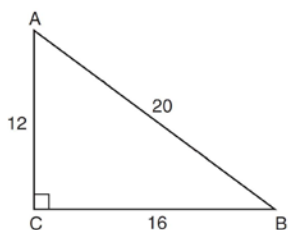
- 11 In triangle  $MCT$ , the measure of  $\angle T = 90^\circ$ ,  $MC = 85$  cm,  $CT = 84$  cm, and  $TM = 13$  cm. Which ratio represents the sine of  $\angle C$ ?
- 12 In  $\triangle ABC$ , the measure of  $\angle B = 90^\circ$ ,  $AC = 50$ ,  $AB = 48$ , and  $BC = 14$ . Which ratio represents the tangent of  $\angle A$ ?

- 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)  $\tan A = \frac{5}{8}$

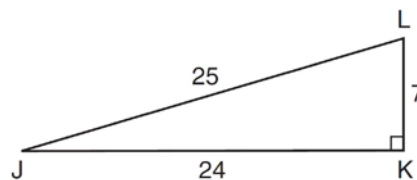
- 14 In right triangle  $ABC$  shown below,  $AC = 12$ ,  $BC = 16$ , and  $AB = 20$ .



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 2: Find the sine, cosine, and tangent ratios of an angle of a right triangle, given the lengths of the sides**

**Answer Section**

1 ANS:

$$\frac{8}{10}$$

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

REF: 011518ia

2 ANS:

$$\frac{15}{17}$$

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

REF: 010919ia

3 ANS:

$$\frac{28}{53}$$

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

REF: 011008ia

4 ANS:

$$\frac{3}{5}$$

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

REF: 081329ia

5 ANS:

$$\frac{5}{13}$$

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

REF: 080414a

6 ANS:

$$\frac{16}{20}$$

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

REF: 011307ia

7 ANS:

$$\frac{8}{15}$$

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

REF: 010316a

8 ANS:

$$\frac{5}{12}$$

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

REF: 081112ia

9 ANS:

$$\frac{4}{3}$$

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

REF: 011226ia

10 ANS:

0.5333

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

REF: 081026ia

11 ANS:

$$\frac{13}{85}$$

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

REF: fall0721ia

12 ANS:

$$\frac{14}{48}$$

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

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