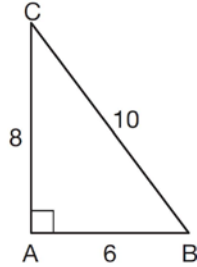


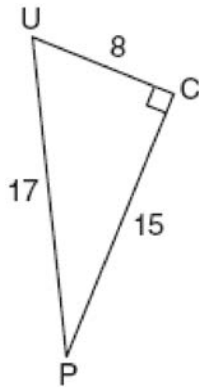
### G.SRT.C.6: Trigonometric Ratios 1

- 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  $\angle B$ ?

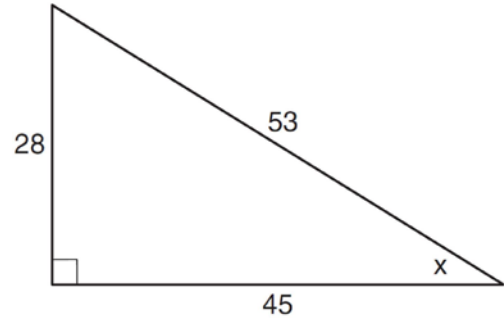
- 1)  $\frac{10}{8}$
  - 2)  $\frac{8}{6}$
  - 3)  $\frac{6}{10}$
  - 4)  $\frac{8}{10}$
- 2 The diagram below shows right triangle  $UPC$ .



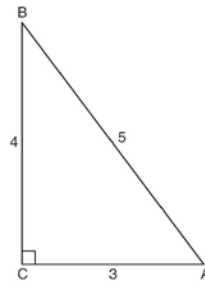
Which ratio represents the sine of  $\angle U$ ?

- 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?

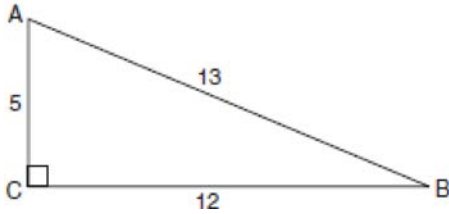


- 1)  $\frac{28}{53}$
  - 2)  $\frac{28}{45}$
  - 3)  $\frac{45}{53}$
  - 4)  $\frac{53}{28}$
- 4 Which ratio represents the cosine of angle  $A$  in the right triangle below?

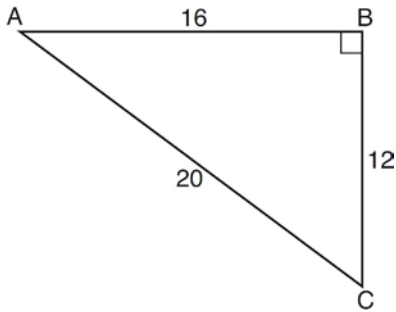


- 1)  $\frac{3}{5}$
- 2)  $\frac{5}{3}$
- 3)  $\frac{4}{5}$
- 4)  $\frac{4}{3}$

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

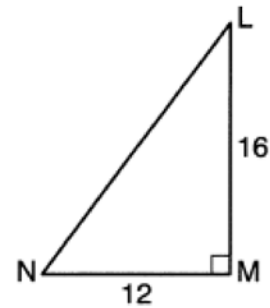


- 1)  $\frac{5}{13}$   
2)  $\frac{12}{13}$   
3)  $\frac{12}{5}$   
4)  $\frac{13}{5}$
- 6 In right triangle  $ABC$  shown below, what is the value of  $\cos A$ ?



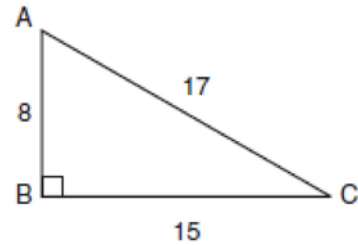
- 1)  $\frac{12}{20}$   
2)  $\frac{16}{20}$   
3)  $\frac{20}{12}$   
4)  $\frac{20}{16}$

- 7 In right triangle  $LMN$  shown below,  $m\angle M = 90^\circ$ ,  $MN = 12$ , and  $LM = 16$ .



The ratio of  $\cos N$  is

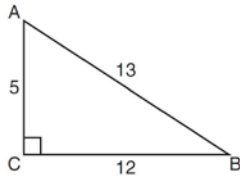
- 1)  $\frac{12}{20}$   
2)  $\frac{16}{20}$   
3)  $\frac{12}{16}$   
4)  $\frac{16}{12}$
- 8 In the accompanying diagram of right triangle  $ABC$ ,  $AB = 8$ ,  $BC = 15$ ,  $AC = 17$ , and  $m\angle ABC = 90^\circ$ .



What is  $\tan \angle C$ ?

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

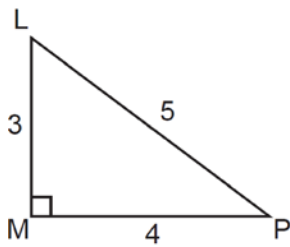
9 The diagram below shows right triangle  $ABC$ .



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

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

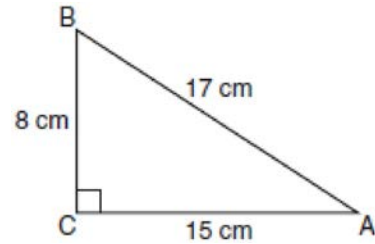
10 The diagram below shows right triangle  $LMP$ .



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

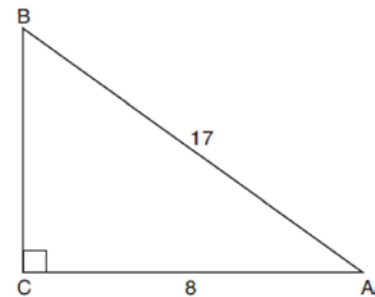
- 1)  $\frac{3}{4}$
- 2)  $\frac{3}{5}$
- 3)  $\frac{4}{3}$
- 4)  $\frac{5}{4}$

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

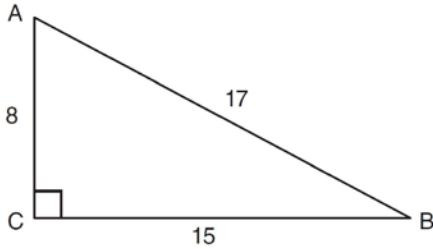
12 In the diagram below of right triangle  $ABC$ ,  $AC = 8$ , and  $AB = 17$ .



Which equation would determine the value of angle  $A$ ?

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

- 13 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

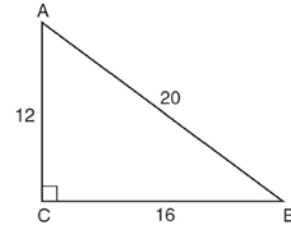
- 1) 0.4706
  - 2) 0.5333
  - 3) 0.8824
  - 4) 1.8750
- 14 In triangle  $MCT$ , the measure of  $\angle T = 90^\circ$ ,  $MC = 85$  cm,  $CT = 84$  cm, and  $TM = 13$  cm. Which ratio represents the sine of  $\angle C$ ?

- 1)  $\frac{13}{85}$
- 2)  $\frac{84}{85}$
- 3)  $\frac{13}{84}$
- 4)  $\frac{84}{13}$

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

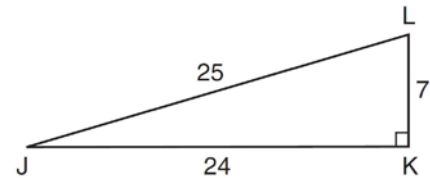
- 1)  $\frac{14}{50}$
- 2)  $\frac{14}{48}$
- 3)  $\frac{48}{50}$
- 4)  $\frac{48}{14}$

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



Which equation is *not* correct?

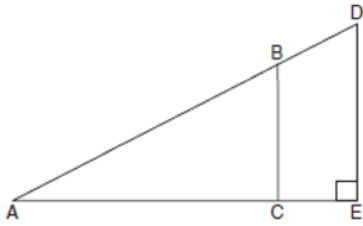
- 1)  $\cos A = \frac{12}{20}$
  - 2)  $\tan A = \frac{16}{12}$
  - 3)  $\sin B = \frac{12}{20}$
  - 4)  $\tan B = \frac{16}{20}$
- 17 In right triangle  $JKL$  in the diagram below,  $KL = 7$ ,  $JK = 24$ ,  $JL = 25$ , and  $\angle K = 90^\circ$ .



Which statement is *not* true?

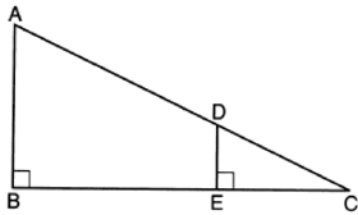
- 1)  $\tan L = \frac{24}{7}$
  - 2)  $\cos L = \frac{24}{25}$
  - 3)  $\tan J = \frac{7}{24}$
  - 4)  $\sin J = \frac{7}{25}$
- 18 In  $\triangle ABC$ ,  $m\angle C = 90$ . If  $AB = 5$  and  $AC = 4$ , which statement is *not* true?
- 1)  $\cos A = \frac{4}{5}$
  - 2)  $\tan A = \frac{3}{4}$
  - 3)  $\sin B = \frac{4}{5}$
  - 4)  $\tan B = \frac{5}{3}$

- 19 In the diagram of right triangle  $ADE$  below,  $\overline{BC} \parallel \overline{DE}$ .



Which ratio is always equivalent to the sine of  $\angle A$ ?

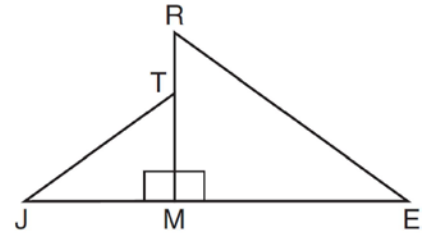
- 1)  $\frac{AD}{DE}$
  - 2)  $\frac{AE}{AD}$
  - 3)  $\frac{BC}{AB}$
  - 4)  $\frac{AB}{AC}$
- 20 In the diagram below,  $\triangle CDE$  is the image of  $\triangle CAB$  after a dilation of  $\frac{DE}{AB}$  centered at  $C$ .



Which statement is always true?

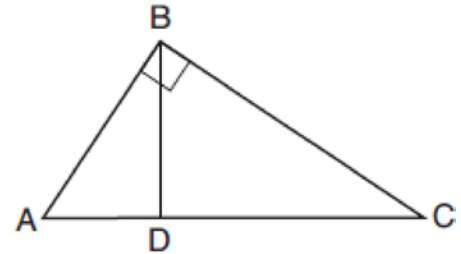
- 1)  $\sin A = \frac{CE}{CD}$
- 2)  $\cos A = \frac{CD}{CE}$
- 3)  $\sin A = \frac{DE}{CD}$
- 4)  $\cos A = \frac{DE}{CE}$

- 21 In the diagram below,  $\triangle ERM \sim \triangle JTM$ .



Which statement is always true?

- 1)  $\cos J = \frac{RM}{RE}$
  - 2)  $\cos R = \frac{JM}{JT}$
  - 3)  $\tan T = \frac{RM}{EM}$
  - 4)  $\tan E = \frac{TM}{JM}$
- 22 In the diagram below of right triangle  $ABC$ , altitude  $\overline{BD}$  is drawn.



Which ratio is always equivalent to  $\cos A$ ?

- 1)  $\frac{AB}{BC}$
- 2)  $\frac{BD}{BC}$
- 3)  $\frac{BD}{AB}$
- 4)  $\frac{BC}{AC}$

**G.SRT.C.6: Trigonometric Ratios 1**  
**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: 011109ia

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

$$\sin N = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{12}{20}$$

REF: 012307geo

8 ANS: 1

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

REF: 010316a

9 ANS: 2

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

REF: 081112ia

10 ANS: 3

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

REF: 011226ia

11 ANS: 3

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

REF: 011008ia

12 ANS: 4

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

REF: 011917geo

13 ANS: 2

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

REF: 081026ia

14 ANS: 1

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

REF: fall0721ia

15 ANS: 2

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

REF: 061009ia

16 ANS: 4

REF: 061417ia

17 ANS: 2

REF: 081418ia

18 ANS: 4

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

REF: 061224ia

19 ANS: 3

REF: 011714geo

20 ANS: 1

A dilation preserves angle measure, so  $\angle A \cong \angle CDE$ .

REF: 062203geo

21 ANS: 4

REF: 061615geo

22 ANS: 2

$\triangle ABC \sim \triangle BDC$

$$\cos A = \frac{AB}{AC} = \frac{BD}{BC}$$

REF: 012023geo