

EduSahara™ Learning Center Assignment**Grade : Class IX, ICSE****Chapter : Trigonometrical Ratios****Name : Trigonometry Miscellaneous**

1. Which of the following are true?

- a) $\tan A = \tan \times A$
- b) The cosine value of an angle is the reciprocal of the sine of the angle.
- c) The cotangent of an angle is the reciprocal of the tangent of the angle.
- d) $\sin(A + B) = \sin A + \sin B$
- e) $\cos(A + B) = \cos A + \cos B$
- f) The cosecant of an angle is the reciprocal of the secant of the angle
- (i) {a,c} (ii) {b,c} (iii) {f,c} (iv) {d,e,c} (v) {c}

2. If $\sin 2A = 2 \sin A$, then $A =$

- (i) 0° (ii) 45° (iii) 30° (iv) 90° (v) 60°

3. If $\sin(A + B) = \frac{1}{2} \sqrt{3}$ and $\sin(A - B) = \frac{1}{2}$, find A & B

- (i) $A = 44^\circ, B = 14^\circ$
- (ii) $A = 45^\circ, B = 15^\circ$
- (iii) $A = 47^\circ, B = 17^\circ$
- (iv) $A = 43^\circ, B = 13^\circ$
- (v) $A = 46^\circ, B = 16^\circ$

4. If $\tan(F + G) = \sqrt{3}$ and $\tan(F - G) = \sqrt{\frac{1}{3}}$, find F & G

- (i) $F = 45^\circ, G = 15^\circ$
- (ii) $F = 44^\circ, G = 14^\circ$
- (iii) $F = 46^\circ, G = 16^\circ$
- (iv) $F = 47^\circ, G = 17^\circ$
- (v) $F = 43^\circ, G = 13^\circ$

5. $\sin 30^\circ \cos 0^\circ + \cos 30^\circ \sin 0^\circ =$

- (i) $\frac{1}{2}$ (ii) 1 (iii) $(-\frac{1}{2})$ (iv) $\frac{3}{2}$ (v) $\frac{1}{4}$

6. In $\triangle DEF$, right angled at E , if $\tan D = \frac{2}{5}$, find $\sin D \cos F + \cos D \sin F$

- (i) $\frac{5}{29} \sqrt{29}$ (ii) $\frac{1}{5} \sqrt{29}$ (iii) 1 (iv) $\frac{1}{2} \sqrt{29}$ (v) $\frac{2}{29} \sqrt{29}$
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7. In $\triangle NOP$, right angled at O , if $\tan N = \frac{4}{5}$, find $\cos N \cos P - \sin N \sin P$

- (i) 0 (ii) $\frac{4}{41} \sqrt{41}$ (iii) $\frac{5}{41} \sqrt{41}$ (iv) $\frac{1}{4} \sqrt{41}$ (v) $\frac{1}{5} \sqrt{41}$
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8. $\sin(A + B) =$

- (i) $\sin A \cos B - \cos A \sin B$
 (ii) $\cos A \cos B - \sin A \sin B$
 (iii) $\cos A \cos B + \sin A \sin B$
 (iv) $\sin A \cos B + \cos A \sin B$
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9. $\sin(A - B) =$

- (i) $\cos A \cos B - \sin A \sin B$
 (ii) $\sin A \cos B - \cos A \sin B$
 (iii) $\cos A \cos B + \sin A \sin B$
 (iv) $\sin A \cos B + \cos A \sin B$
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10. $\cos(A + B) =$

- (i) $\cos A \cos B + \sin A \sin B$
 (ii) $\sin A \cos B + \cos A \sin B$
 (iii) $\sin A \cos B - \cos A \sin B$
 (iv) $\cos A \cos B - \sin A \sin B$
-

11. $\cos(A - B) =$

- (i) $\cos A \cos B - \sin A \sin B$
 (ii) $\sin A \cos B + \cos A \sin B$
 (iii) $\sin A \cos B - \cos A \sin B$

$$(iv) \cos A \cos B + \sin A \sin B$$

$$12. \tan(A + B) =$$

$$(i) \frac{\tan A - \tan B}{1 + \tan A \tan B}$$

$$(ii) \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

$$(iii) \frac{\tan A - \tan B}{1 - \tan A \tan B}$$

$$(iv) \frac{\tan A + \tan B}{1 + \tan A \tan B}$$

$$13. \tan(A - B) =$$

$$(i) \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

$$(ii) \frac{\tan A + \tan B}{1 + \tan A \tan B}$$

$$(iii) \frac{\tan A - \tan B}{1 + \tan A \tan B}$$

$$(iv) \frac{\tan A - \tan B}{1 - \tan A \tan B}$$

$$14. \sin 85^\circ =$$

$$(i) \cos 50^\circ \cos 35^\circ - \sin 50^\circ \sin 35^\circ$$

$$(ii) \cos 50^\circ \cos 35^\circ + \sin 50^\circ \sin 35^\circ$$

$$(iii) \sin 50^\circ \cos 35^\circ - \cos 50^\circ \sin 35^\circ$$

$$(iv) \sin 50^\circ \cos 35^\circ + \cos 50^\circ \sin 35^\circ$$

$$15. \sin 64^\circ =$$

$$(i) \cos \quad \cos \quad \sin \quad \sin$$

$$80^\circ \quad 16^\circ - \quad 80^\circ \quad 16^\circ$$

(ii) $\sin 80^\circ \cos 16^\circ - \cos 80^\circ \sin 16^\circ$

(iii) $\sin 80^\circ \cos 16^\circ + \cos 80^\circ \sin 16^\circ$

(iv) $\cos 80^\circ \cos 16^\circ + \sin 80^\circ \sin 16^\circ$

16. $\cos 80^\circ =$

(i) $\cos 64^\circ \cos 16^\circ - \sin 64^\circ \sin 16^\circ$

(ii) $\cos 64^\circ \cos 16^\circ + \sin 64^\circ \sin 16^\circ$

(iii) $\sin 64^\circ \cos 16^\circ + \cos 64^\circ \sin 16^\circ$

(iv) $\sin 64^\circ \cos 16^\circ - \cos 64^\circ \sin 16^\circ$

17. $\cos 25^\circ =$

(i) $\cos 40^\circ \cos 15^\circ + \sin 40^\circ \sin 15^\circ$

(ii) $\sin 40^\circ \cos 15^\circ + \cos 40^\circ \sin 15^\circ$

(iii) $\cos 40^\circ \cos 15^\circ - \sin 40^\circ \sin 15^\circ$

(iv) $\sin 40^\circ \cos 15^\circ - \cos 40^\circ \sin 15^\circ$

18. $\tan 75^\circ =$

(i)
$$\frac{\tan 40^\circ + \tan 35^\circ}{1 - \tan 40^\circ \tan 35^\circ}$$

(ii)
$$\frac{\tan 40^\circ - \tan 35^\circ}{1 - \tan 40^\circ \tan 35^\circ}$$

(iii)
$$\frac{\tan 40^\circ - \tan 35^\circ}{1 + \tan 40^\circ \tan 35^\circ}$$

(iv)
$$\frac{\tan 40^\circ + \tan 35^\circ}{1 + \tan 40^\circ \tan 35^\circ}$$

19. $\tan 40^\circ =$

(i) $\tan 80^\circ + \tan 40^\circ$

$$1 - \tan 80^\circ \tan 40^\circ$$

$$(ii) \frac{\tan 80^\circ + \tan 40^\circ}{1 + \tan 80^\circ \tan 40^\circ}$$

$$(iii) \frac{\tan 80^\circ - \tan 40^\circ}{1 - \tan 80^\circ \tan 40^\circ}$$

$$(iv) \frac{\tan 80^\circ - \tan 40^\circ}{1 + \tan 80^\circ \tan 40^\circ}$$

20. Which of the following are true?

a) $\cos 2A = \cos^2 A + \sin^2 A$

b) $\cos 2A = \cos^2 A - \sin^2 A$

c) $\sin 2A = 2 \sin^2 A \cos^2 A$

d) $\sin 2A = 2 \sin A \cos A$

e) $\tan 2A = \frac{2 \tan A}{1 - \tan^2 A}$

f) $\tan 2A = \frac{2 \tan A}{1 + \tan^2 A}$

(i) {c,b,d} (ii) {f,a,e} (iii) {a,b} (iv) {c,d} (v) {b,d,e}

21. Which of the following are true?

a) $\tan 60^\circ = \frac{2 \tan 30^\circ}{1 + \tan^2 30^\circ}$

b) $\tan 60^\circ = \frac{2 \tan 30^\circ}{1 - \tan^2 30^\circ}$

c) $\cos 60^\circ = \cos^2 30^\circ + \sin^2 30^\circ$

d) $\cos 60^\circ = \cos^2 30^\circ - \sin^2 30^\circ$

e) $\sin 60^\circ = 2 \sin 30^\circ \cos 30^\circ$

f) $\sin 60^\circ = 2 \sin^2 30^\circ \cos^2 30^\circ$

(i) {b,d,e} (ii) {a,b} (iii) {c,d} (iv) {c,b,d} (v) {f,a,e}

22. Find the value of $\frac{(1 + \sin \theta)}{(\cos \theta)} + \frac{(\cos \theta)}{(1 + \sin \theta)}$

(i) $2 \sin \theta$ (ii) $2 \sec \theta$ (iii) $2 \operatorname{cosec} \theta$ (iv) $2 \cos \theta$

23. Find the length of the side of a 6-sided regular polygon inscribed in a circle of radius 1 mt

(i) 0.9000 mt (ii) 1.0500 mt (iii) 1.1000 mt (iv) 1.0000 mt

24. Find the length of the chord of the unit circle subtending an angle of 124° at the centre

(i) 1.8158 (ii) 1.8658 (iii) 1.7658 (iv) 1.6658

25. Find the area of the right angled triangle with hypotenuse 5 cm and one of the acute angle being 64°

(i) 3.9254 cm (ii) 4.9254 cm (iii) 5.9254 cm (iv) 6.9254 cm

26. Find the area of an isosceles triangle with base 4 cm and vertical angle 32°

(i) 13.9519 cm (ii) 12.9519 cm (iii) 14.9519 cm (iv) 15.9519 cm

27. If U , V and W are the interior angles of a triangle, then $\sin\left(\frac{U+V}{2}\right) =$

(i) $\sin\left(\frac{W}{2}\right)$ (ii) $\cos\left(\frac{W}{2}\right)$ (iii) $\sin W$ (iv) $\cos\left(\frac{U}{2}\right)$ (v) $\sin\left(\frac{U}{2}\right)$

28. Which of the following are true?

a) $\sin 55^\circ = \cos 35^\circ$

b) $\sin 42^\circ = \cos 48^\circ$

c) $\sin 35^\circ = \cos 35^\circ$

d) $\sin 46^\circ = \cos 44^\circ$

e) $\sec 57^\circ = \operatorname{cosec} 33^\circ$

f) $\tan 53^\circ = \cot 37^\circ$

g) $\cos 32^\circ = \sin 32^\circ$

(i) {c,a} (ii) {a,b,d,e,f} (iii) {c,g,d} (iv) {g,b} (v) {c,e,f}

29. Which of the following are true?

a) $\tan 90^\circ$ is not defined

b) $\operatorname{cosec} 0^\circ$ is not defined

- c) $\cot 90^\circ$ is not defined
 - d) $\tan 0^\circ$ is not defined
 - e) $\operatorname{cosec} 90^\circ$ is not defined
 - f) $\cot 0^\circ$ is not defined
 - g) $\sec 0^\circ$ is not defined
 - h) $\sec 90^\circ$ is not defined
- (i) {a,b,f,h} (ii) {e,g,f} (iii) {c,h,a} (iv) {d,b} (v) {c,a}
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30. Which of the following are true?

a) $\cos \theta = \frac{1}{\operatorname{cosec} \theta}$

b) $\operatorname{cosec} \theta = \frac{1}{\sin \theta}$

c) $\cot \theta = \frac{1}{\sec \theta}$

d) $\sec \theta = \frac{1}{\sin \theta}$

e) $\sec \theta = \frac{1}{\cos \theta}$

f) $\tan \theta = \frac{1}{\cot \theta}$

- (i) {c,e} (ii) {d,a,f} (iii) {c,b,e} (iv) {b,e,f} (v) {a,b}
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31. Which of the following are true?

a) $\cos 45^\circ = 1$

b) $\cos 0^\circ = 1$

c) $\tan 0^\circ = 1$

d) $\cos 90^\circ = 1$

e) $\sin 90^\circ = 1$

f) $\tan 90^\circ = 1$

g) $\sin 0^\circ = 1$

h) $\sin 45^\circ = 1$

- (i) {g,e,b} (ii) {b,e} (iii) {c,e} (iv) {d,f,b} (v) {a,b}

32. Which of the following are true?

a) $\sin 90^\circ = 0$

b) $\sin 45^\circ = 0$

c) $\cos 90^\circ = 0$

d) $\cos 45^\circ = 0$

e) $\tan 0^\circ = 0$

f) $\tan 90^\circ = 0$

g) $\sin 0^\circ = 0$

h) $\cos 0^\circ = 0$

(i) {h,c,e} (ii) {c,e,g} (iii) {a,c} (iv) {b,e} (v) {d,f,g}

Assignment Key

- 1) (v)
- 2) (i)
- 3) (ii)
- 4) (i)
- 5) (i)
- 6) (iii)
- 7) (i)
- 8) (iv)
- 9) (ii)
- 10) (iv)
- 11) (iv)
- 12) (ii)
- 13) (iii)
- 14) (iv)
- 15) (ii)
- 16) (i)
- 17) (i)
- 18) (i)
- 19) (iv)
- 20) (v)
- 21) (i)
- 22) (ii)
- 23) (iv)
- 24) (iii)
- 25) (ii)
- 26) (i)
- 27) (ii)
- 28) (ii)
- 29) (i)
- 30) (iv)
- 31) (ii)
- 32) (ii)