1. Which of the following are true?

   a) The cosine value of an angle is the reciprocal of the sine of the angle.
   b) $\cos(H + I) = \cos H + \cos I$
   c) $\tan H = \tan \times H$
   d) $\sin(H + I) = \sin H + \sin I$
   e) The cotangent of an angle is the reciprocal of the tangent of the angle.
   f) The cosecant of an angle is the reciprocal of the secant of the angle

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

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

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

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

   (i) B=44°,C=14° (ii) B=47°,C=17° (iii) B=46°,C=16° (iv) B=43°,C=13° (v) B=45°,C=15°

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

   (i) H=47°,I=17° (ii) H=44°,I=14° (iii) H=43°,I=13° (iv) H=45°,I=15° (v) H=46°,I=16°

5. $\sin 45° \cos 90° + \cos 45° \sin 90° =$

   (i) 1 (ii) $\frac{1}{2}\sqrt{5}$ (iii) $\frac{1}{2}\sqrt{2}$ (iv) $\frac{1}{2}\sqrt{\frac{4}{2}}$ (v) $\frac{1}{2}\sqrt{\frac{1}{2}}$

6. In $\triangle HIJ$, right angled at I, if $\tan H = \frac{3}{4}$, find $\sin H \cos J + \cos H \sin J$

   (i) $\frac{4}{5}$ (ii) $\frac{5}{3}$ (iii) 1 (iv) $\frac{5}{4}$ (v) $\frac{3}{5}$

7. In $\triangle FGH$, right angled at G, if $\tan F = \frac{3}{5}$, find $\cos F \cos H - \sin F \sin H$

   (i) $\frac{1}{5}\sqrt{34}$ (ii) $\frac{5}{34}\sqrt{34}$ (iii) 0 (iv) $\frac{1}{3}\sqrt{34}$ (v) $\frac{3}{34}\sqrt{34}$

8. $\sin(A + B) =$

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

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

9. $\sin(A - B) =$

(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) $\cos A\cos B - \sin A\sin B$

10. $\cos(A + B) =$

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

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

(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) $\sin A\cos B - \cos A\sin B$

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

(i) $\dfrac{\tan A - \tan B}{1 + \tan A\tan B}$ (ii) $\dfrac{\tan A + \tan B}{1 + \tan A\tan B}$ (iii) $\dfrac{\tan A + \tan B}{1 - \tan A\tan B}$ (iv) $\dfrac{\tan A - \tan B}{1 - \tan A\tan B}$

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

(i) $\dfrac{\tan A + \tan B}{1 - \tan A\tan B}$ (ii) $\dfrac{\tan A - \tan B}{1 - \tan A\tan B}$ (iii) $\dfrac{\tan A - \tan B}{1 + \tan A\tan B}$ (iv) $\dfrac{\tan A + \tan B}{1 + \tan A\tan B}$

14. $\sin 55° =$

(i) $\cos 45°\cos 10° - \sin 45°\sin 10°$ (ii) $\cos 45°\cos 10° + \sin 45°\sin 10°$ (iii) $\sin 45°\cos 10° - \cos 45°\sin 10°$

(iv) $\sin 45°\cos 10° + \cos 45°\sin 10°$

15. $\sin 14° =$

(i) $\cos 28°\cos 14° - \sin 28°\sin 14°$ (ii) $\sin 28°\cos 14° + \cos 28°\sin 14°$ (iii) $\sin 28°\cos 14° - \cos 28°\sin 14°$

(iv) $\cos 28°\cos 14° + \sin 28°\sin 14°$

16. $\cos 84° =$

(i) $\cos 48°\cos 36° + \sin 48°\sin 36°$ (ii) $\sin 48°\cos 36° + \cos 48°\sin 36°$ (iii) $\cos 48°\cos 36° - \sin 48°\sin 36°$

(iv) $\sin 48°\cos 36° - \cos 48°\sin 36°$

17. $\cos 28° =$

(i) $\sin 56° \cos 28° + \cos 56° \sin 28°$ (ii) $\cos 56° \cos 28° + \sin 56° \sin 28°$ (iii) $\sin 56° \cos 28° - \cos 56° \sin 28°$

(iv) $\cos 56° \cos 28° - \sin 56° \sin 28°$

18. $\tan 77° =$

(i) $\dfrac{\tan 49° - \tan 28°}{1 + \tan 49° \tan 28°}$ (ii) $\dfrac{\tan 49° - \tan 28°}{1 - \tan 49° \tan 28°}$ (iii) $\dfrac{\tan 49° + \tan 28°}{1 - \tan 49° \tan 28°}$ (iv) $\dfrac{\tan 49° + \tan 28°}{1 + \tan 49° \tan 28°}$

19. $\tan 12° =$

(i) $\dfrac{\tan 60° + \tan 48°}{1 + \tan 60° \tan 48°}$ (ii) $\dfrac{\tan 60° - \tan 48°}{1 - \tan 60° \tan 48°}$ (iii) $\dfrac{\tan 60° - \tan 48°}{1 + \tan 60° \tan 48°}$ (iv) $\dfrac{\tan 60° + \tan 48°}{1 - \tan 60° \tan 48°}$

20. Which of the following are true?

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

b) $\tan 2A = \dfrac{2 \tan A}{1 - \tan^2 A}$

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

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

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

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

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

21. Which of the following are true?

a) $\sin 100° = 2\sin^2 50° \cos^2 50°$

b) $\cos 100° = \cos^2 50° + \sin^2 50°$

c) $\sin 100° = 2\sin 50° \cos 50°$

d) $\tan 100° = \dfrac{2\tan 50°}{1 - \tan^2 50°}$

e) $\tan 100° = \dfrac{2\tan 50°}{1 + \tan^2 50°}$

f) $\cos 100° = \cos^2 50° - \sin^2 50°$

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

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

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

23. Find the length of the side of a 5-sided regular polygon inscribed in a circle of radius 1 m

(i) 1.2256 m (ii) 1.1756 m (iii) 1.2756 m (iv) 1.0756 m

24. Find the length of the chord of the unit circle subtending an angle of 134° at the centre

(i) 1.8910 (ii) 1.7410 (iii) 1.9410 (iv) 1.8410

25. Find the area of the right angled triangle with hypotenuse 7 cm and one of the acute angle being 30°

(i) 11.6085 cm (ii) 12.6085 cm (iii) 10.6085 cm (iv) 9.6085 cm

26. Find the area of an isosceles triangle with base 4 cm and vertical angle 62°

(i) 6.6567 cm (ii) 7.6567 cm (iii) 8.6567 cm (iv) 5.6567 cm

27. If P, Q and R are the interior angles of a triangle, then $\sin(\dfrac{P + Q}{2}) =$

(i) $\sin R$ (ii) $\sin(\dfrac{R}{2})$ (iii) $\sin(\dfrac{P}{2})$ (iv) $\cos(\dfrac{R}{2})$ (v) $\cos(\dfrac{P}{2})$

28. Which of the following are true?

a) $\cos 35° = \sin 35°$
b) $\sec 55° = \operatorname{cosec} 35°$
c) $\sin 41° = \cos 49°$
d) $\sin 25° = \cos 65°$
e) $\sin 27° = \cos 63°$
f) $\sin 22° = \cos 22°$
g) $\tan 21° = \cot 69°$

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

29. Which of the following are true?

a) $\cot 90°$ is not defined
b) $\cot 0°$ is not defined
c) $\sec 90°$ is not defined
d) $\operatorname{cosec} 0°$ is not defined
e) $\tan 90°$ is not defined
f) $\tan 0°$ is not defined
g) $\operatorname{cosec} 90°$ is not defined
h) $\sec 0°$ is not defined

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

30. Which of the following are true?

a) $\sec\theta = \dfrac{1}{\cos\theta}$

b) $\cot\theta = \dfrac{1}{\sec\theta}$

c) $\cos\theta = \dfrac{1}{\operatorname{cosec}\theta}$

d) $\operatorname{cosec}\theta = \dfrac{1}{\sin\theta}$

e) $\tan\theta = \dfrac{1}{\cot\theta}$

f) $\sec\theta = \dfrac{1}{\sin\theta}$

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

31. Which of the following are true?

a) $\sin 0° = 1$
b) $\tan 90° = 1$
c) $\sin 90° = 1$
d) $\tan 0° = 1$
e) $\cos 90° = 1$
f) $\sin 45° = 1$
g) $\cos 0° = 1$
h) $\cos 45° = 1$

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

32. Which of the following are true?

a) $\tan 0° = 0$
b) $\cos 45° = 0$
c) $\sin 45° = 0$
d) $\cos 90° = 0$
e) $\sin 0° = 0$
f) $\sin 90° = 0$
g) $\tan 90° = 0$
h) $\cos 0° = 0$

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

Assignment Key

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