ONE MARK TEST

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ENGLISH MEDIUM **LESSON – 6** **TEST - 1**

1 $a\cot\theta + b\operatorname{cosec}\theta = p$ and $b\cot\theta + a\operatorname{cosec}\theta = q$ then $p^2 - q^2$ is equal to

(A) $a^2 - b^2$ (B) $b^2 - a^2$ (C) $a^2 + b^2$ (D) $b - a$

2 If $(\sin\alpha + \operatorname{cosec}\alpha)^2 + (\cos\alpha + \sec\alpha)^2 = k + \tan^2\alpha + \cot^2\alpha$, then the value of k is equal to

(A) 9 (B) 7 (C) 5 (D) 3

3 The value of $\sin^2\theta + \dfrac{1}{1+\tan^2\theta}$ is equal to

(A) $\tan^2\theta$ (B) 1 (C) $\cot^2\theta$ (D) 0

4 Two persons are standing 'x' metres apart from each other and the height of the first person is double that of the other. If from the middle point of the line joining their feet an observer finds the angular elevations of their tops to be complementary, then the height of the shorter person (in metres) is

(A) $\sqrt{2}\,x$ (B) $\dfrac{x}{2\sqrt{2}}$ (C) $\dfrac{x}{\sqrt{2}}$ (D) $2x$

5 The angle of depression of the top and bottom of 20 m tall building from the top of a multistoried building are $30°$ and $60°$ respectively. The height of the multistoried building and the distance between two buildings (in metres) is

(A) 20, $10\sqrt{3}$ (B) 30, $5\sqrt{3}$ (C) 20, 10 (D) 30, $10\sqrt{3}$

6 If $5x = \sec\theta$ and $\dfrac{5}{x} = \tan\theta$, then $x^2 - \dfrac{1}{x^2}$ is equal to

(A) 25 (B) $\dfrac{1}{25}$ (C) 5 (D) 1

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7 The electric pole subtends an angle of $30°$ at a point on the same level as its foot. At a second point 'b' metres above the □ist, the depression of the foot of the pole is $60°$. The height of the pole (in metres) is equal to

(A) $\sqrt{3}\,b$ (B) $\frac{b}{3}$ (C) $\frac{b}{2}$ (D) $\frac{b}{\sqrt{3}}$

8 If $\sin\theta + \cos\theta = a$ and $\sec\theta + \operatorname{cosec}\theta = b$, then the value of $b(a^2 - 1)$ is equal to

(A) $2a$ (B) $3a$ (C) 0 (D) $2ab$

9 $(1 + \tan\theta + \sec\theta)(1 + \cot\theta - \operatorname{cosec}\theta)$ is equal to

(A) 0 (B) 1 (C) 2 (D) -1

10 $\tan\theta\operatorname{cosec}^2\theta - \tan\theta$ is equal to

(A) $\sec\theta$ (B) $\cot^2\theta$ (C) $\sin\theta$ (D) $\cot\theta$

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