Trigonometry

1. If $\cos\theta = 2p/p^2+1$, then $\tan\theta$ is equal to:
(A) p^2+1/p^2-1 (B) $p^2-1/2p$
(C) $2p/p^2+1$ (D) $2p/p^2-1$

2. For $0° < \theta < 90°$, if $2\cos^2\theta = 3\sin\theta$, then the value of $(\csc^2\theta - \cot^2\theta + \cos^2\theta)$ is equal to:
(A) $1\frac{1}{2}$ (B) $2\frac{3}{4}$
(C) $1\frac{3}{4}$ (D) $2\frac{1}{4}$

3. For θ being an acute angle, if $\csc\theta = 1.25$, then the value of $(4\tan\theta - 5\cos\theta)/(\sec\theta + 4\cot\theta)$ is equal to:
(A) $3/7$ (B) $4/7$
(C) $1/4$ (D) $1/2$

4. For $0° < \theta < 90°$, if $\frac{\sec\theta(1-\sin\theta)(\sec\theta+\tan\theta)}{(\sec\theta-\tan\theta)^2} = \frac{1+k}{1-k}$, then k is equal to:
(A) $\csc\theta$ (B) $\cos\theta$
(C) $\sec\theta$ (D) $\sin\theta$

5. If $6(\sec^2 59° - \cot^2 31°) + 2/3 \sin90° - 3\tan^2 56°$ y $\tan^2 34° = y/3$, then the value of y is:
(A) $2/3$ (B) $-2/3$
(C) 2 (D) -2

6. If $\sec\theta = 4x$ and $\tan\theta=4/x$,($x\neq0$) then the value of $8(x^2-1/x^2)$ is:
(A) $1/16$ (B) $1/4$
(C) $1/2$ (D) $1/8$

7. If $\cos x = -1/2$ and $\pi < x < 3\pi/2$, then the value $4\tan^2 x + 3\csc^2 x$ is:
(A) 16 (B) 8
(C) 4 (D) 10

8. If $6(\sec^2 59° - \cot^2 31°) - \frac{2}{3}\sin90° - 3\tan^2 56°$ y $\tan^2 34° = y/3$ then the value of y is:
(A) $8/5$ (B) $-8/5$
(C) $2/3$ (D) $-2/3$

9. If $\cos x = \frac{-1}{2}$ and $\pi < x < \frac{3\pi}{2}$, then the value of $2\tan^2 x + 3\csc^2 x$ is:
(A) 4 (B) 10
(C) 8 (D) 16

10. If $\sec\theta = 3x$ and $\tan\theta=3/x$,($x\neq0$) then the value of $9(x^2-1/x^2)$ is:
(A) $1/2$ (B) $1/3$
(C) 1 (D) $1/4$

11. If $2\sin^2\theta + 5\cos\theta - 4 = 0$, $0° < \theta < 90°$, then the value of $\cot\theta + \csc\theta$ is:
(A) $\frac{3\sqrt{3}}{2}$ (B) $\sqrt{3}$
(C) $\frac{2}{\sqrt{3}}$ (D) $\frac{\sqrt{3}}{2}$

12. If $12\cot^2\theta - 31\csc\theta + 32 = 0, 0° < \theta < 90°$, then the value of $\sin\theta$ will be:
(A) $\frac{5}{4},\frac{4}{3}$ (B) $\frac{2}{3},\frac{1}{4}$
(C) $\frac{4}{5},\frac{3}{4}$ (C) $\frac{1}{3},\frac{3}{2}$

13. If $\cos\theta = \frac{2P}{P^2+1}, (P \neq \pm1)$ then the $\csc\theta$ is equal to:
(A) $\frac{2P}{P^2-1}$
(B) $\frac{2P}{P^2+1}$
(C) $\frac{P^2-1}{2P}$
(D) $\frac{P^2+1}{P^2-1}$

14. If $\cos x = \frac{-\sqrt{3}}{2}$ and $P < X < \frac{3P}{2}$, then the value of $2\cot^2 x - 3\sec^2 x$ is:
(A) 10 (B) 4
(C) 8 (D) 16

15. If $\sin\theta = 3x$ and $\cos\theta=3/x$,($x\neq0$) then the value of $6(x^2+1/x^2)$ is:
(A) $1/4$ (B) $1/3$
(C) $2/3$ (D) $1/2$

16. If $4(\csc^2 66^0 - \tan^2 24^0) + 1/2 \sin 90^0 - 4\tan^2 66^0$ y $\tan^2 24^0 = y/2$, then the value of y is:

    (A) 1/2   **(B)** 1

    (C) –1/2   **(D)** –1

17. If $\cot\theta = 5x$ and $\csc\theta = 5/x$ $(x \neq 0)$ then, $5(x^2 - 1/x^2)$ is:

    (A) 1/5   **(B)** 1/2

    (C) -1/5   **(D)** -1/4

18. If $4(\csc^2 65° - \tan^2 25°) - \sin 90° - \tan^2 63°$y $\tan^2 27° = y/2$, then the value of y is:

    (A) –1/2   **(B)** 2

    (C) –1   **(D)** 1

99. If $\cos x = \dfrac{-\sqrt{3}}{2}$ and $\pi < x < \dfrac{3\pi}{2}$, then the value of $2\cot^2 x - 3\sec^2 x$ is:

    (A) 6   **(B)** 4

    (C) 8   **(D)** 2

20. If $\cos x = -1/2$ and $< x < \dfrac{3\pi}{2}$, then the value of $2\tan^2 x - 3\csc^2 x$ is:

    (A) 2   **(B)** 10

    (C) 8   **(D)** 4