UNIT 24 EXERCISES 11-15

TRIG

2010B 13. In $\triangle ABC$, $\cos(2A - B) + \sin(A + B) = 2$ and $AB = 4$. What is BC?

(A) $\sqrt{2}$ **(B)** $\sqrt{3}$ **(C)** 2 **(D)** $2\sqrt{2}$ **(E)** $2\sqrt{3}$

2011B 14. A segment through the focus F of a parabola with vertex V is perpendicular to $\overline{FV}$ and intersects the parabola in points A and B. What is $\cos(\angle AVB)$?

(A) $-\frac{3\sqrt{5}}{7}$ **(B)** $-\frac{2\sqrt{5}}{5}$ **(C)** $-\frac{4}{5}$ **(D)** $-\frac{3}{5}$ **(E)** $-\frac{1}{2}$

1999 15. Let x be a real number such that $\sec x - \tan x = 2$. Then $\sec x + \tan x =$

(A) 0.1 **(B)** 0.2 **(C)** 0.3 **(D)** 0.4 **(E)** 0.5

2006A 15. Suppose $\cos x = 0$ and $\cos(x + z) = 1/2$. What is the smallest possible positive value of z?

(A) $\frac{\pi}{6}$ **(B)** $\frac{\pi}{3}$ **(C)** $\frac{\pi}{2}$ **(D)** $\frac{5\pi}{6}$ **(E)** $\frac{7\pi}{6}$

2017A 15. Let $f(x) = \sin x + 2\cos x + 3\tan x$, using radian measure for the variable x. In what interval does the smallest positive value of x for which $f(x) = 0$ lie?

(A) $(0,1)$ **(B)** $(1,2)$ **(C)** $(2,3)$ **(D)** $(3,4)$ **(E)** $(4,5)$