11. Which of the following is an even function?

a. sin x

b. cos x

c. x^3

d. x^5

12. Find the domain of the function $f(x) = \frac{1}{x+1}$

a. $D(f) = \{-\infty \leq x \leq \infty\}$

b. $D(f) = \{x \in R : x \neq 0\}$

c. $D(f) = \{x \in R : x \neq -1\}$

d. $D(f) = \{x \in R : x \neq 1\}$

13. If $f(x) = x^2 + 1$ and $g(x) = 2x - 3$, find $(f \circ g)(1)$

a. 3

b. 2

c. 1

d. 0

14. Find the inverse of the function $f(x) = \sqrt{x^2 - 1}$

a. $y = \sqrt{y^2 - 1}$

b. $y = \sqrt{y - 1}$

c. $y = \sqrt{y + 1}$

d. $y = \sqrt{y^2 + 1}$

15. Which of the following statement about limit of function is **NOT** correct?

a. The limit of a sum is the sum of the limits.

b. The limit of a sum is the product of the limits.

c. The limit of a product is the product of the limits.

d. The limit of a quotient is the quotient of the limits (provided the limit of denominator is

not 0).

16. Find $\lim_{x \to 0} \frac{3x^3-8}{x-2}$ a. 4 b. − 4 c. 2 d. − 2

17. Evaluate $\lim_{x \to 1} \frac{x^2-1}{x^2-3x+2}$ a. 4 b. − 4 c. 2 d. − 2

18.Evaluate $\lim_{x \to +\infty} \frac{2x^2+3x+1}{3x^2-5x+2}$ a. $\frac{1}{2}$ b. $-\frac{1}{2}$ c. $\frac{2}{3}$ d. $-\frac{2}{3}$

19. Find the derivative of the equation $y = (2x+1)(x^2 - x + 3)$ at the point $x = 0$.

a. − 5 b. 5 c. − 1 d. 1

20. Find $\frac{dy}{dx}$ if $y = x^2 \sin x$

a. $2x\sin x + x^2\cos x$ b. $2x\cos x + x^2\sin x$ c. $2\cos x + x^2\sin x$

d. $x\cos x + x^2\cos x$