

Chapter 1 (Unit A)

1. A&C 2. F 3. $f(g(x)) = \frac{1}{x^2} + 1$ 4. $f^{-1}(x) = \sqrt[3]{x+4}$
5. a) infinite b) removable c) none 6. $\lim_{x \rightarrow -\infty} f(x) = \infty$ $\lim_{x \rightarrow \infty} f(x) = -\infty$
7. 5 feet 8. increasing $(-1.45, 0.12)$ decreasing $(-\infty, -1.45) \cup (0.12, \infty)$

Chapter 2 & 3 (Unit B)

1. C 2. VA: $x = 0, x = 3$ HA: $y = 0$
3. a) degree of numerator > degree of denominator (ex: $f(x) = \frac{x^3}{x^2+1}$) b) $f(x) = \frac{4x+1}{2x+3}$
4. $D: (-\infty, \infty)$ $R: (0, \infty)$ HA: $y = 0$ increasing: $(-\infty, \infty)$ $\lim_{x \rightarrow -\infty} f(x) = 0$ $\lim_{x \rightarrow \infty} f(x) = \infty$
5. $x = 5$ 6. $x \approx 4.4$ 7. $x = 25$ 8. during 2021
9. $4 \ln a + 3 \ln b + \frac{1}{4} \ln c$ 10. $\log \frac{x+2}{\sqrt[4]{y-4}}$

Chapter 7 (Unit C)

1. B 2. H 3. A 4. J 5. D 6. J 7. J

Chapter 10 (Unit D)

1. B 2. $r = \frac{23}{32}$ 3. $S = -20$ 4. $a_n = 5(0.4)^{n-1}; a_7 = .02048$
5. -19908 6. -419430