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**Precalculus_G11_Ch12_H.W.**

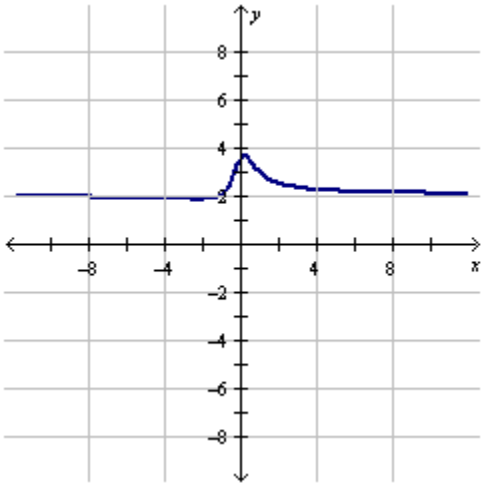
*Indicate the answer choice that best completes the statement or answers the question.*

1. Estimate $\lim_{x \to \infty} \frac{20x^6 - 2x + 1}{4x^6 - 4}$.

   a. 0 b. 5

   c. ∞ d. Limit does not exist.

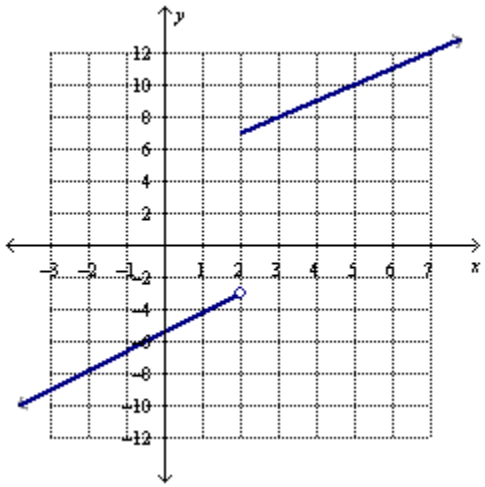
2. Estimate $\lim_{x \to \infty} \frac{8x^2 + 3x + 7}{4x^2 + 2}$ using a graph.




   a. 0 b. 2

   c. ∞ d. Limit does not exist.

3. Estimate $\lim_{x \to 2} f(x)$ where $f(x) = \begin{cases} x - 5 & x < 2 \\ x + 5 & x \geq 2 \end{cases}$.




   a. 4 b. 7

   c. –3 d. Limit does not exist.

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**Precalculus_G11_Ch12_H.W.**

4. Estimate $\lim_{x \to \infty} \frac{2x^6 - 2x + 1}{x^6 - 5}$.

a. 0 b. 2

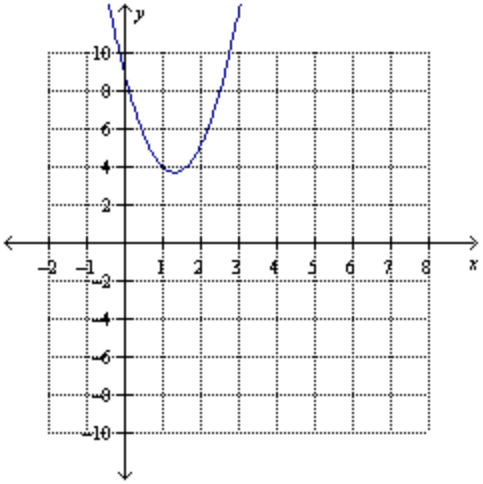
c. ∞ d. Limit does not exist.

5. Use limits to find the appropriate area between the graph of the function and the *x*-axis given by the definite integral $\int_0^7 2\sqrt[5]{x^2}\,dx$.

a. $10\sqrt[5]{14}$ units$^2$ b. $25\sqrt[5]{49}$ units$^2$

c. $25\sqrt[5]{14}$ units$^2$ d. $10\sqrt[5]{49}$ units$^2$

6. Estimate $\lim_{x \to 3} 3x^2 - 8x + 9$using a graph.




a. 3 b. 60

c. 12 d. Limit does not exist.

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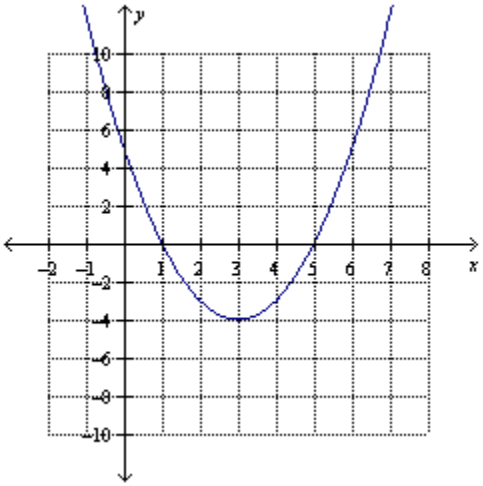
**Precalculus_G11_Ch12_H.W.**

7. Estimate $\lim_{x \to 3} x^2 - 6x + 5$ using a graph.




a. 32 b. –9

c. –4 d. Limit does not exist.

8. Estimate $\lim_{x \to -1} \frac{x^2 - x - 2}{x + 1}$.

a. 0 b. –3

c. –2 d. Limit does not exist.

9. Evaluate the indefinite integral. $\int \left(5x^5 + 4x^4 - 4\right) dx$

a. $\frac{5}{6}x^5 + \frac{4}{5}x^4 + C$ b. $\frac{5}{6}x^6 + \frac{4}{5}x^5 - 4x + C$

c. $\frac{5}{6}x^6 + \frac{4}{5}x^5 + C$ d. $\frac{5}{6}x^5 + \frac{4}{5}x^4 - 4x + C$

10. Use a graphing calculator to find the value of the limit. $\lim_{x \to \infty} \frac{6x^2 - 5}{7x^2}$.

a. $\frac{7}{6}$ b. $\frac{6}{7}$

c. $-\frac{5}{7}$ d. 0

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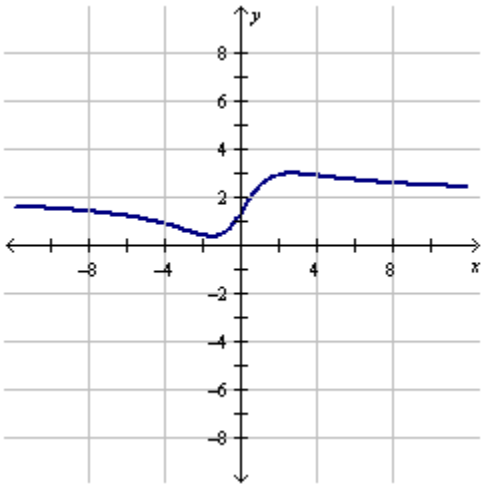
**Precalculus_G11_Ch12_H.W.**

11. Use a graphing calculator to find the value of the limit. $\lim_{x \to \infty} \frac{7x^4 - 5}{6x^5}$.

a. $-\frac{5}{6}$ b. $\frac{6}{7}$

c. $-\frac{6}{5}$ d. 0

12. Estimate $\lim_{x \to \infty} \frac{2x^2 + 5x + 5}{x^2 + 4}$ using a graph.




a. 0 b. 2

c. ∞ d. Limit does not exist.

13. Estimate $\lim_{x \to \infty} x^5 - 4x^3 + 4x + 2$.

a. 2 b. 1

c. ∞ d. −∞

14. Estimate $\lim_{x \to -1} \frac{x^2 - 6x - 7}{x + 1}$.

a. 0 b. –8

c. –12 d. Limit does not exist.

15. Which is the area between the $x$-axis and $y = x^3$ from $x = 1$ to $x = 6$?

a. $\frac{6^3 - 1^3}{3} = \frac{215}{3}$ b. $\frac{6^3 + 1^3}{3} = \frac{217}{3}$

c. $\frac{6^4 + 1^4}{4} = \frac{1297}{4}$ d. $\frac{6^4 - 1^4}{4} = \frac{1295}{4}$

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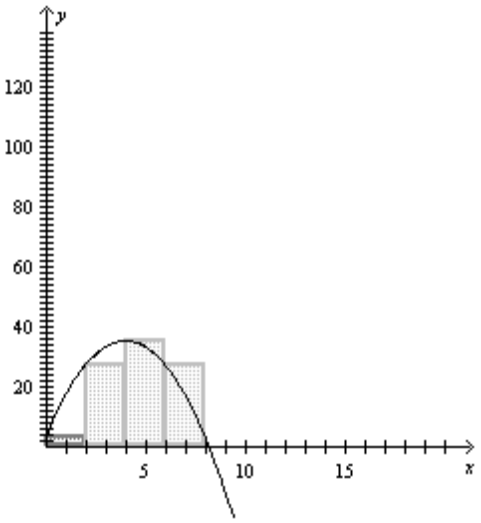
**Precalculus_G11_Ch12_H.W.**

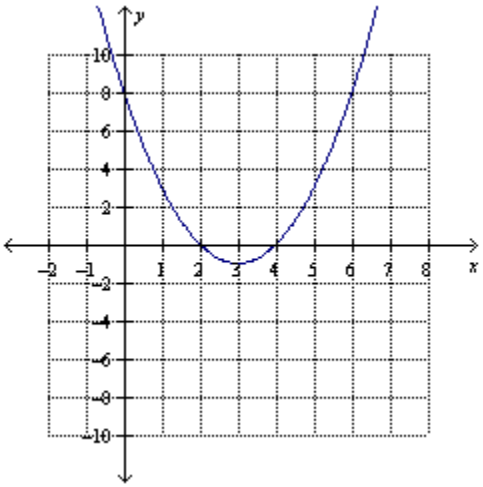
16. Find the approximate area between the curve $f(x) = -2x^2 + 16x + 3$ and the $x$-axis on the interval $[0, 8]$ using 4 rectangles. Use the left endpoint of each rectangle to determine the height.




a. 80 square units b. 184 square units

c. 576 square units d. 144 square units

17. Estimate $\lim_{x \to 2} x^2 - 6x + 8$ using a graph.




a. 24 b. –8

c. 0 d. Limit does not exist.

18. Evaluate the indefinite integral. $\int \left(2x^5 + 2x^2 + 5\right) dx$

a. $\frac{1}{3}x^5 + \frac{2}{3}x^2 + C$ b. $\frac{1}{3}x^5 + \frac{2}{3}x^2 + 5x + C$

c. $\frac{1}{3}x^6 + \frac{2}{3}x^3 + C$ d. $\frac{1}{3}x^6 + \frac{2}{3}x^3 + 5x + C$

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**Precalculus_G11_Ch12_H.W.**

**Find the derivative of each function.**

19. $b(m) = 2m^{\frac{7}{2}} + \frac{2}{m^2} - 12m$

a. $7m^{\frac{5}{2}} + \frac{4}{m^3} - 12m$

b. $2m^{\frac{5}{2}} + \frac{4}{m^3} - 12$

c. $2m^{\frac{5}{2}} - \frac{4}{m^3} - 12m$

d. $7m^{\frac{5}{2}} - \frac{4}{m^3} - 12$

20. Estimate $\lim_{x \to \infty} \frac{6x^6 - 2x + 2}{3x^6 - 3}$.

a. 0 b. 2

c. $\infty$ d. Limit does not exist.

21. Use the Quotient Rule to find the derivative of $f(x) = \frac{4x}{7x - 18}$.

a. $-\frac{72}{(7x - 18)^2}$

b. $\frac{29}{(7x - 18)^2}$

c. $\frac{x - 29}{(7x - 18)^2}$

d. $\frac{x + 72}{(7x - 18)^2}$

22. Use limits to find the appropriate area between the graph of the function and the *x*-axis given by the definite integral $\int_0^7 9\sqrt[5]{x^2}\, dx$.

a. $25\sqrt[5]{63}$ units$^2$

b. $45\sqrt[5]{49}$ units$^2$

c. $45\sqrt[5]{63}$ units$^2$

d. $25\sqrt[5]{49}$ units$^2$

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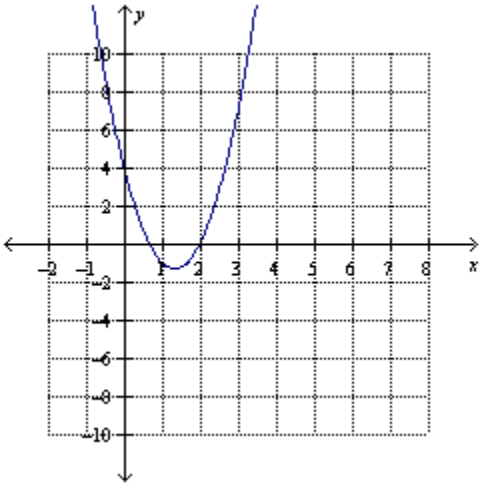
**Precalculus_G11_Ch12_H.W.**

23. Estimate $\lim_{x \to 1} 3x^2 - 8x + 4$ using a graph.




a. –1 b. 15

c. –5 d. Limit does not exist.

24. Evaluate the indefinite integral. $\int \left(x^4 + 2x^2 + 4\right) dx$

a. $\frac{1}{5}x^4 + \frac{2}{3}x^2 + 4x + C$ b. $\frac{1}{5}x^4 + \frac{2}{3}x^2 + C$

c. $\frac{1}{5}x^5 + \frac{2}{3}x^3 + 4x + C$ d. $\frac{1}{5}x^5 + \frac{2}{3}x^3 + C$

25. Evaluate the indefinite integral. $\int \left(2x^5 + 6x^4 + 4\right) dx$

a. $\frac{1}{3}x^5 + \frac{6}{5}x^4 + C$ b. $\frac{1}{3}x^5 + \frac{6}{5}x^4 + 4x + C$

c. $\frac{1}{3}x^6 + \frac{6}{5}x^5 + 4x + C$ d. $\frac{1}{3}x^6 + \frac{6}{5}x^5 + C$

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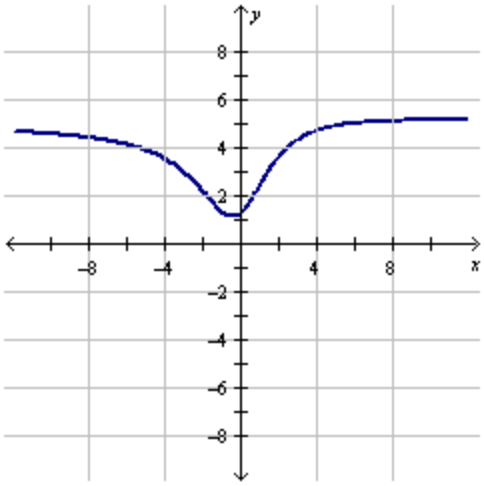
**Precalculus_G11_Ch12_H.W.**

26. Estimate $\lim_{x \to \infty} \frac{5x^2 + 3x + 6}{x^2 + 5}$ using a graph.




a. 0 b. 5
c. $\infty$ d. Limit does not exist.

27. Use a graphing calculator to find the value of the limit. $\lim_{x \to \infty} \frac{7x^3 - 2}{8x^4}$.

a. $\frac{8}{7}$ b. $-4$
c. 0 d. $-\frac{1}{4}$

28. Use limits to evaluate the integral. $\int_0^4 5x^3\,dx$

a. 1280 b. 16
c. 320 d. 80

29. Use the Fundamental Theorem of Calculus to find the area of the region between the graph of the function $\frac{5}{2}x^{\frac{2}{7}} + \frac{8}{5}x^{\frac{4}{9}} + 6$ and the *x*-axis on the interval $[1, 12]$. Round off your answer to the nearest integer.

a. 182 units$^2$ b. 151 units$^2$
c. 146 units$^2$ d. 162 units$^2$

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**Precalculus_G11_Ch12_H.W.**

30. Which is the area between the *x*-axis and $y = x^2$ from $x = 1$ to $x = 4$?

a. $\frac{4^2 + 1^2}{2} = \frac{17}{2}$

b. $\frac{4^3 + 1^3}{3} = \frac{65}{3}$

c. $\frac{4^2 - 1^2}{2} = \frac{15}{2}$

d. $\frac{4^3 - 1^3}{3} = 21$

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