

Chapter 6
Polynomial Functions

1. Simplify $\frac{k^7}{k^{10}}$.

A. k^{-3}

B. $\frac{1}{k}$

C. k^{17}

D. k^3

Hint

2. Simplify $\frac{2t^4u^2v^6}{10tu^5v^2}$.

A. $\frac{1}{5}t^4u^{10}v^{12}$

B. $\frac{1}{5}t^3u^{-3}v^4$

C. $5t^3u^3v^4$

D. $\frac{1}{5}t^5u^7v^8$

Hint

3. Simplify $6g(-3h - 4)$.

A. $-18gh - 4$

B. $6gh - 4$

C. $-18gh - 24g$

D. $-18g - 4$

4. Simplify $\frac{x^2+3x-28}{x-4}$.

A. $x^2 + 7$

B. $x + 7$

C. $x - 4$

D. $x + 4$

Hint

5. Factor $8a^4b - 3ab^2c$.

A. $8ab(a^2 - 3bc)$

B. $a^2b(8a^2 - 3bc)$

C. $abc(8a^3 - 3b)$

D. $ab(8a^3 - 3bc)$

6. Use the distributive property to rewrite $3(5 + y)$ without parentheses.

A. $8 + 3y$

B. $15 + y$

C. $8 + y$

D. $15 + 3y$

Hint

7. Find the axis of symmetry of the graph of $g(x) = x^2 - 5x + 2$.

A. $x = 2$

B. $x = -\frac{5}{2}$

C. $x = \frac{5}{2}$

D. $x = -5$

Hint

8. Find $p(2)$ for $p(x) = x^4 + 3x^3 - 2x^2 - 4x + 1$.

A. 25

B. -7

C. -1

D. 12

9. When $2x^3 + x^2 - 3$ is divided by $x + 1$, the remainder is _____.

A. 0

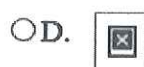
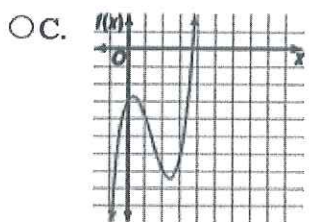
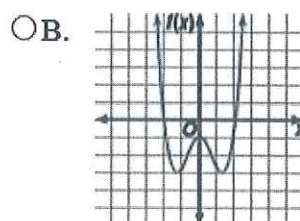
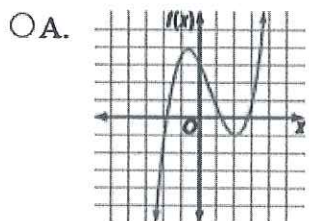
B. 3

C. -2

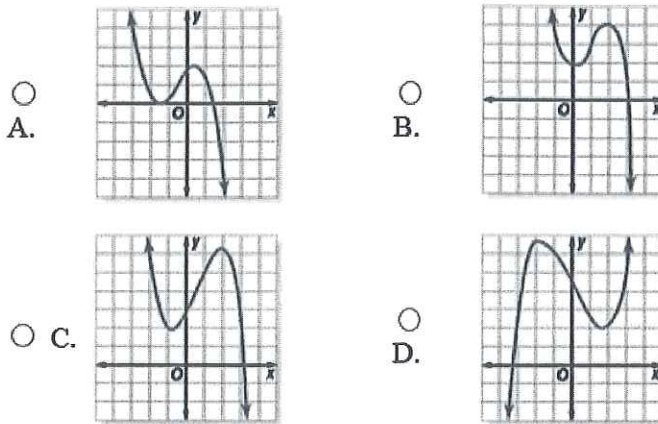
D. -4

Hint

10. Graph $f(x) = x^3 - 4x^2 + 2x - 3$.



17. Which graph best represents the function $f(x) = -x^3 + 3x^2 - x + 2$?



18. Simplify $\frac{x^3 - 4x^2 + x + 12}{x - 3}$

- A. $x^2 - 7x + 22 + \frac{78}{x-3}$ ○ B. $x^2 - x - 2 + \frac{6}{x-3}$
 ○ C. $x^2 - x + 2 + \frac{18}{x-3}$ ○ D. $x^2 - x - 2$

Hint

19. How many possible positive real zeros are there for the polynomial $f(x) = 2x^5 + 3x^4 - x^3 - 5x^2 + 4x + 1$?

- A. 1 ○ B. 2
 ○ C. 3 ○ D. 5

Hint

20. Which of the following cannot be a rational root of $f(x) = 4x^3 - 6x^2 - 3x - 12$, according to the Rational Zero Theorem?

- A. $\frac{5}{2}$ ○ B. $\frac{3}{4}$
 ○ C. $\frac{3}{2}$ ○ D. 2

Answer Key:

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