

B 12. Simplify  $\frac{(3y^4n^6)^2}{(y^2n^{-3})^4}$ . Assume the denominator is not equal to zero.

- a.  $9y^{16}$  b.  $9n^{24}$  c.  $\frac{9}{n^{24}}$  d.  $\frac{9}{y^{16}}$

$$\frac{3^2(y^4)^2(n^6)^2}{(y^2)^4(n^{-3})^4} = \frac{9y^8n^{12}}{y^8n^{-12}} = 9n^{24}$$

C 13. Which monomial represents the number of square units in the area of a circle whose radius is  $4x^3$  units?

- a.  $16\pi x^9$  b.  $8\pi x^5$  c.  $16\pi x^6$  d.  $8\pi x^6$

$$\pi r^2 = \pi (4x^3)^2 = \pi 4^2(x^3)^2 = 16\pi x^6$$

B 14. Which of the following polynomials shows the terms of  $x^2 + 5x^3 - 4 - 2x$  arranged so that the powers of  $x$  are in descending order?

- a.  $5x^3 - 4 - 2x + x^2$  b.  $5x^3 + x^2 - 2x - 4$  c.  $5x^3 - 2x + x^2 - 4$  d.  $-4 - 2x + x^2 + 5x^3$

A 15. Arrange the terms of  $4x^3y^2 - 6xy^3 + 2x^5 + 3y$  so that the powers of  $x$  are in descending order.

- a.  $2x^5 + 4x^3y^2 - 6xy^3 + 3y$  b.  $4x^3y^2 + 3y + 2x^5 - 6xy^3$  c.  $3y - 6xy^3 + 4x^3y^2 + 2x^5$  d.  $-6xy^3 + 4x^3y^2 + 3y + 2x^5$

D 16. Simplify  $\frac{a^7}{a^4}$ . Assume the denominator is not equal to zero.

- a.  $a^{11}$  b.  $a^{28}$  c. 1 d.  $a^3$

$$\frac{a^7}{a^4} = a^3$$

B 17. Simplify  $(-2hk)^4(4h^3k^5)^2$ .

- a.  $2h^{24}k^{40}$  b.  $256h^{10}k^{14}$  c.  $-64h^9k^{11}$  d.  $-256h^{10}k^{14}$

$$(-2)^4 h^4 k^4 \cdot 4^2 (h^3)^2 (k^5)^2 = 16 h^4 k^4 \cdot 16 h^6 k^{10} = 256 h^{10} k^{14}$$

D 18. Simplify  $\frac{m^5n^2}{m^2n^3}$ . Assume the denominator is not equal to zero.

- a.  $m^7n^5$  b.  $m^3n$  c.  $\frac{n}{m^3}$  d.  $\frac{m^3}{n}$

$$\frac{m^5n^2}{m^2n^3} = \frac{m^3}{n}$$

C 19. Find  $(9t^2 + 4t - 6) - (t^2 - 2t + 4)$ .

- a.  $9t^2 + 6t - 2$  b.  $8t^2 + 6t - 10$  c.  $9t^2 + 6t - 10$  d.  $8t^2 + 2t - 2$

$$\begin{array}{r} 9t^2 + 4t - 6 \\ - t^2 + 2t - 4 \\ \hline 8t^2 + 6t - 10 \end{array}$$

A 20. Simplify  $\frac{a^9}{a^3}$ . Assume the denominator is not equal to zero.

- a.  $a^6$  b.  $a^{27}$  c.  $a^3$  d.  $a^{12}$

$$\frac{a^9}{a^3} = a^6$$