

**Chapter 5**  
**Form D**

Choose the correct answer to each problem.

1. Identify the polynomial as a monomial, binomial or trinomial:  $3x^2 - 4x$ .  
a. monomial            b. binomial            c. trinomial            d. none of these
2. Determine the degree of the polynomial:  $14x^2y^7 - 6x^5y^3$ .  
a. 14                      b. 9                      c. 8                      d. 15

For problems 3 – 5, add or subtract as indicated.

3.  $(-2x^3 + 5x^2 - 6x) + (-2x^2 + 3x - 5)$   
a.  $-2x^3 + 3x^2 - 3x - 5$                       b.  $-4x^5 + 8x^3 - 11x$   
c.  $-2x^3 + 7x^2 - 3x - 5$                       d.  $4x^5 + 15x^3 + 30x$
4.  $(15x^3y^2 - 8x^2y + 7xy^2) - (3x^3y^2 + 3x^2y - 4xy^2)$   
a.  $12x^3y^2$     b.  $12x^3y^2 - 11x^2y + 11xy^2$   
c.  $45x^6y^4 - 24x^4y^2 - 28x^2y^4$                       d.  $12x^3y^2 - 5x^2y + 3xy^2$
5. Subtract  $12x^3 - 5x^2 - 6x + 3$  from  $20x^3 + 7x^2 + 3x - 5$ .  
a.  $-8x^3 - 12x^2 - 9x + 8$                       b.  $32x^3 + 2x^2 - 3x - 2$   
c.  $-8x^3 + 2x^2 - 2x - 8$                       d.  $8x^3 + 12x^2 + 9x - 8$
6. Evaluate  $-x^2y^2 + 3xy - y^2$  for  $x = -1, y = -4$ .  
a. 28                      b. 12                      c. 42                      d. -20

For problems 7 – 13, simplify each expression.

7.  $2x^5 \cdot 2^3x^{12}$   
a.  $64x^{60}$                       b.  $16x^{60}$                       c.  $16x^{17}$                       d.  $4x^{20}$

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8.  $(-4x^4y^5)^2$   
a.  $64x^8y^{10}$       b.  $16x^8y^{10}$       c.  $64x^{16}y^{25}$       d.  $-64x^{16}y^{25}$

9.  $2^0 - 3^{-1}$   
a.  $\frac{1}{3}$       b.  $\frac{1}{5}$       c.  $\frac{4}{3}$       d.  $\frac{2}{3}$

10.  $(2ab^3)^3(ab)^4$   
a.  $8a^7b^{13}$       b.  $8a^7b^7$       c.  $2a^7b^{13}$       d.  $2a^4b^{13}$

11.  $\frac{(7a^{-4}b^{-2})^3}{49a^{-15}b^3}$   
a.  $\frac{3}{7a^{27}b^3}$       b.  $\frac{7}{a^3b^3}$       c.  $\frac{1}{7b^3}$       d.  $\frac{7a^3}{b^9}$

12.  $\left(\frac{12x^{-3}y^5}{x^{-4}}\right)^{-1}$   
a.  $\frac{1}{12xy^5}$       b.  $\frac{-12x^7}{y^5}$       c.  $\frac{12}{x^7y^5}$       d.  $\frac{x}{12y^5}$

13.  $\frac{(3y^5)^2(4y^{-3})^{-2}}{18y^{-5}}$   
a.  $\frac{2y^2}{3}$       b.  $\frac{y^{21}}{32}$       c.  $\frac{2y^{55}}{3}$       d.  $\frac{-8y^{16}}{3}$

For problems 14 –18, find each product.

14.  $-4x^2y^3(15x^2y^3 - 9x^2y^2 + 8xy)$   
a.  $-60x^2y^3 + 36x^2y^5 - 32x^2y^3$       b.  $-60x^4y^6 - 36x^4y^5 + 32x^3y^4$   
c.  $-60x^4y^9 + 36x^4y^6 - 32x^2y^3$       d.  $-60x^4y^6 + 36x^4y^5 - 32x^3y^4$

15.  $(7x - 4)(3x + 2)$   
a.  $21x^2 - 8$       b.  $21x^2 + 2x - 8$   
c.  $21x^2 - 2x - 8$       d.  $21x^2 - 26x - 8$

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16.  $(8t + 9)(8t - 9)$

a.  $64t^2 - 81$

c.  $16t - 18$

b.  $64t^2 + 81$

d.  $64t^2 - 144t + 81$

17.  $(z^2 - 5)^2$

a.  $z^2 - 25$

b.  $z^4 - 10z^2 + 25$

c.  $z^4 - 25$

d.  $z^4 + 10z^2 - 25$

18.  $(2x - 3)(x^2 + 4x - 6)$

a.  $2x^3 + 11x^2 + 18$

c.  $2x^3 + 5x^2 - 24x + 18$

b.  $2x^3 + 5x^2 - 24x - 18$

d.  $2x^3 + 11x^2 - 24x + 18$

For problems 19 – 20, divide.

19. 
$$\frac{30x^3y^2 - 20x^2y^2 + 15xy}{-5xy}$$

a.  $-6x^2y + 4xy - 3$

c.  $30x^3y^2 - 20x^2y - 3$

b.  $-5x$

d.  $6x^2y + 4xy + 3$

20. 
$$\frac{6x^3 + 3x^2 - 5x - 6}{2x - 1}$$

a.  $3x^2 - 2 + \frac{1}{2x - 1}$

c.  $3x^2 + 3x - 1 - \frac{5}{2x - 1}$

b.  $3x^2 + 3x - 1 - \frac{7}{2x - 1}$

d.  $3x^2 + 3x - 4 - \frac{10}{2x - 1}$

21. Write  $6.29 \times 10^{-3}$  in decimal notation.

a. 62900

b. 0.00629

c. 629000

d. 0.0000629

22. Write 270,600,000 in scientific notation.

a.  $2.706 \times 10^8$

b.  $2.76 \times 10^9$

c.  $2.706 \times 10^{-8}$

d.  $2.76 \times 10^{-9}$

23. Multiply  $(4.9 \times 10^{-3})(5.2 \times 10^{-8})$ . Give the answer in scientific notation.

a.  $25.48 \times 10^{24}$

b.  $25.48 \times 10^{-11}$

c.  $2.548 \times 10^{-10}$

d.  $2.548 \times 10^{30}$

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24. Divide  $\frac{28.6 \times 10^{-12}}{14.3 \times 10^{-4}}$ . Give the answer in scientific notation.

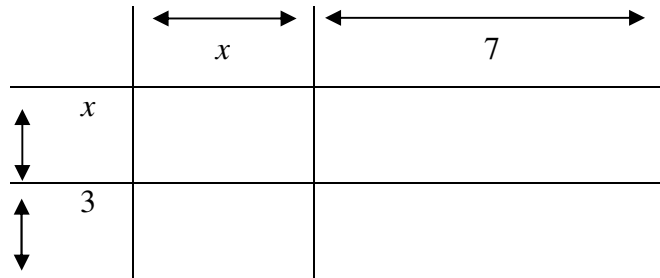
a.  $2 \times 10^{-16}$

b.  $2 \times 10^3$

c.  $2 \times 10^{-3}$

d.  $2 \times 10^{-8}$

25. Write a polynomial in descending powers of  $x$  that represents the area of the figure below.



a.  $21x^2$

b.  $x^2 + 21$

c.  $x^2 + 10x + 21$

d.  $2x + 10$