1. Multiply.

    $(9x + 7)(2x^2 + 9x + 2)$

    The answer is $18x^3 + 95x^2 + 81x + 14$.
    (Simplify your answer.)

2. Multiply.

    $(x^3 + 8)(x^7 - 4)$

    The answer is $x^{10} + 8x^7 - 4x^3 - 32$.
    (Type the terms in descending order.)

3. Add.

    $$\left(\frac{1}{8}x^4 + \frac{3}{5}x^3 + \frac{7}{8}x^2 + 7\right) + \left(-\frac{5}{8}x^4 + \frac{1}{8}x^2 - 7\right)$$

    $$\left(\frac{1}{8}x^4 + \frac{3}{5}x^3 + \frac{7}{8}x^2 + 7\right) + \left(-\frac{5}{8}x^4 + \frac{1}{8}x^2 - 7\right) = -\frac{1}{2}x^4 + \frac{3}{5}x^3 + x^2$$

    (Simplify your answer. Use integers or fractions for any numbers in the expression.)

4. Classify the polynomial as a monomial, binomial, trinomial, or none of these.

    $49x^8 - 9$

    This polynomial is
    ○ A. none of these.   ○ B. a trinomial.
    ✔ C. a binomial.   ○ D. a monomial.

5. Multiply.

    $$\left(a - \frac{19}{2}\right)^2$$

    The answer is $a^2 - 19a + \dfrac{361}{4}$.
    (Simplify your answer. Type the terms in descending order.)

6.   Multiply.

$(2t-3)(2t+3)$

The answer is $4t^2-9$.
(Simplify your answer.)

---

7.   Divide and check.

$(42x^5-35x^3+8x^2)\div(7x^2)$

$(42x^5-35x^3+8x^2)\div(7x^2)=6x^3-5x+\dfrac{8}{7}$

(Use integers or fractions for any numbers in the expression.)

---

8.   Find the special product.

$(a^2+9b)(a^2-9b)$

$(a^2+9b)(a^2-9b)=a^4-81b^2$ (Simplify your answer.)

---

9.   Subtract.

$(3a^3+4b^3)-(5a^2b-3ab^2+4b^3+3a^3)$

The difference is $-5a^2b+3ab^2$. (Simplify your answer.)

---

10.   Subtract.

$(1.7x^3+4.6x^2-3.2x)-(-4.4x^3-4.8x^2+58)$

$(1.7x^3+4.6x^2-3.2x)-(-4.4x^3-4.8x^2+58)=6.1x^3+9.4x^2-3.2x-58$

(Simplify your answer. Type coefficients as integers or decimals.)

---

11.   Evaluate the polynomial for $x=2$.

x^3-7x^2+x

$x^3-7x^2+x=-18$

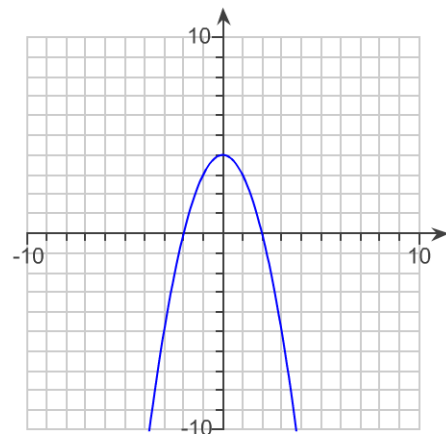12. Collect like terms and then arrange them in descending order.

$$-x + \frac{3}{4} + 16x^6 - x - \frac{1}{2} - 2x^6$$

$$-x + \frac{3}{4} + 16x^6 - x - \frac{1}{2} - 2x^6 = \boxed{14x^6 - 2x + \frac{1}{4}}$$

13. The graph shows the polynomial equation $y = 4 - x^2$. Use it to estimate the value of the polynomial when $x = -1$.

What is the approximate value of y, when $x = -1$?

  ○ A. 0
  ✅ B. 3
  ○ C. 6
  ○ D. -3

14. Collect like terms.

$$6u^6v - 3uv^9 + 8u^6v - 4uv^9$$

The answer is $\boxed{14u^6v - 7uv^9}$.

15. Collect like terms.

$$3x^3 + 4x - 2x^3 - 5x$$

$$3x^3 + 4x - 2x^3 - 5x = \boxed{x^3 - x}$$
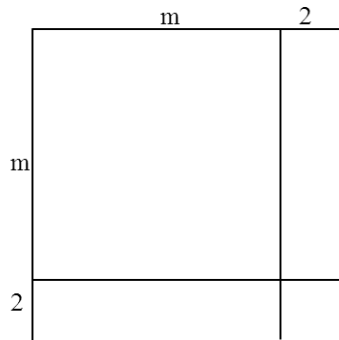
16. Multiply.

$$4x(x^2 + 5x - 3)$$

The answer is $\boxed{4x^3 + 20x^2 - 12x}$.
(Type the terms in descending order.)

17. Find two algebraic expressions for the area of the figure. First, regard the figure as one large rectangle, and then regard the figure as a sum of four smaller rectangles.

Regarding the figure as one large rectangle, the algebraic expression for the area of the figure is $(m+2)(m+2)$.
(Simplify your answer.)

Regarding the figure as a sum of four smaller rectangles, the algebraic expression for the area of the figure is $m^2 + 4m + 4$.
(Simplify your answer.)

18. Collect like terms.

$3x^3 + 9x^3 + 6$

$3x^3 + 9x^3 + 6 = \boxed{12x^3 + 6}$

19. Multiply.

$(4x^9 + 7)^2$

The answer is $\boxed{16x^{18} + 56x^9 + 49}$.
(Type the terms in descending order.)

20. Add.

$(8 + 9x + 3x^2 + 6x^3) + (9 - 9x + 3x^2 - 6x^3)$

$(8 + 9x + 3x^2 + 6x^3) + (9 - 9x + 3x^2 - 6x^3) = \boxed{6x^2 + 17}$
(Simplify your answer.)

21. Multiply.

$(8x - 8)(x + 5)$

The answer is $\boxed{8x^2 + 32x - 40}$.
(Type the terms in descending order.)

22. Multiply.

$(6 + 3x)(6 - 8x)$

The answer is $-24x^2 - 30x + 36$.
(Type the terms in descending order.)

23. Subtract.

$(7x^4 + 7x^3 - 8) - (7x^2 - 3x + 7)$

$(7x^4 + 7x^3 - 8) - (7x^2 - 3x + 7) = 7x^4 + 7x^3 - 7x^2 + 3x - 15$
(Simplify your answer.)

24. Identify the degree of each term of the polynomial and the degree of the polynomial.

$$-6x^3 + 7x^2 + \frac{7}{8}x + 5$$

The degree of the first term is 3 .

The degree of the second term is 2 .

The degree of the third term is 1 .

The degree of the fourth term is 0 .

The degree of the polynomial is 3 .

25. Identify the coefficient of each term of the polynomial.

$$5x^2 + \frac{5}{6}x + 2$$

The coefficient of the first term is 5 . (Type an integer or a fraction.)

The coefficient of the second term is $\dfrac{5}{6}$. (Type an integer or a fraction.)

The coefficient of the third term is 2 . (Type an integer or a fraction.)

26.   Divide and check.

$$(25w^3 + 15w^2 + 35w + 46) \div (5w + 5)$$

$$(25w^3 + 15w^2 + 35w + 46) \div (5w + 5) = 5w^2 - 2w + 9 + \frac{1}{5w + 5}$$

(Simplify your answer. Use integers or fractions for any numbers in the expression.)