

Divide the following polynomials by the **monomial** given (split them up).

1)
$$\frac{12x^5 - 15x^4 - 18x^3}{3x^2}$$

2)
$$\frac{4a^7b^6 - 6a^6b^8 + 12a^2b^{10}}{2a^2b^6}$$

3)
$$\frac{12x^3 + 6x^2 - 5x + 4}{-6x}$$

Divide using **long division**.

4)
$$3a - 2 \overline{) 6a^3 + 11a^2 - 4a - 9}$$

5)
$$(x^3 - 13x - 12) \div (x - 4)$$

Divide using synthetic division (remember to switch the sign of the number that goes in the box).

6)
$$(x^3 + 4x^2 - 7x - 14) \div (x - 2)$$

7)
$$(x^4 - 2x^2 - 6x + 15) \div (x + 5)$$

8)
$$\frac{3x^2 - 15x + 9}{x - 4}$$

Divide the following polynomials using whatever method you feel is appropriate.

9) $\frac{c^2 + 10c + 24}{c + 8}$

10) $(4a^3 - 8a^2 + a)(4a)^{-1}$

11) $\frac{3x^3 - 5x^2 - 17x - 12}{x - 4}$

12) $(6n^3 + 5n^2 + 2n + 9) \div (2n + 3)$

13) $\frac{x^4 - 6x^3 + 3x - 9}{x + 3}$

14) $\frac{8xy + 2x^2}{2x^2}$

The remaining problems should be review from sections 3-1 & 3-2. Simplify each. Hint: #19,20 are not FOIL problems.

15) _____ $(15a^6)(4a^3)$

16) _____ $(-2n^5)^3$

17) _____ $\frac{28g^4}{7g^5}$

18) _____ $\frac{r^{-1}}{(3r)^{-1}}$

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

20) _____ $(5m - 3n + 1) - (6m - 3n + 2)$

21) _____ $(2x + 4)(x - 7)$

22) _____ The degree for: $6 + 2y^5 - y^3 + 9y^2$