AA1 Q2 4.1-4.3 Review

For use after Section ~~4-2~~ 4-3 of text **ALGEBRA AND TRIGONOMETRY, Structure and Method, Book 2**

NAME_____ DATE_____ SCORE_____

# *Polynomials; Using the Laws of Exponents; Multiplying Polynomials*

Show your work on this paper.

Simplify.

1. $3x^3 + 9 + 7x^2 - x^3$ _____
2. $3xy^3 - x^3y - 2x^3y - 2xy^3$ _____
3. $7m - 6 - (2m + 5)$ _____
4. $4(2y^2 - 3y) + 3(y^2 + 6y - 1)$ _____
5. $2(3n^2 + 4) - 9(n^2 - 2)$ _____
6. $4a(x + y) + 5a(x - y) + ay$ _____

Simplify each expression. Assume that variable exponents represent positive integers.

7. $3m^2 \cdot 2m$ _____
8. $2r \cdot 3r^2 \cdot 5r^3$ _____
9. $(a^3)^2$ _____
10. $(5z^6)^3$ _____
11. $(-b^3c^4)^5$ _____
12. $d^2(3de - 5d^2)$ _____
13. $4m(3a^2m)$ _____
14. $3x(4xyz^3)^2$ _____
15. $(n^c)^d(n^d)^{d+c}$ _____
16. $x^3(x^{s-1})^3$ _____
17. $5x^a \cdot 3x^2$ _____
18. $y^a \cdot y^b \cdot y^c$ _____
19. $w^{3c-b} \cdot w^{c+b}$ _____
20. $(m^{2e-3b} \cdot m^{3b-e})^t$ _____

Multiply. (ALL WORK ON SEPARATE PAPER)

21. $(3a + 1)(a - 2)$ _____
22. $(2r - 5)(r + 2)$ _____
23. $(s + 3)(s - 3)$ _____
24. $(2b + 1)(3b - 2)$ _____
25. $(c - 5)^2$ _____
26. $(2t - 3)(3t + 5)$ _____
27. $(5x + 7y)(5x - 7y)$ _____
28. $(2d + 3)^2$ _____
29. $(3f - 2g)^2$ _____
30. $(2x^2 + 1)(3x^2 - 2)$ _____
31. $5(e + 3h)^2$ _____
32. $2(3j - k^2)(3j + k^2)$ _____
33. $(m - 1)(m + n + 2)$ _____
34. $(3x^2 - 2y^3)^2$ _____
35. $(a^2 - 3)(a^2 + b - 3)$ _____
36. $m^2(n - 2)^2$ _____

OBJECTIVE 1–i: To add, subtract, multiply, or find powers of monomials (review).

# What Happened to the Man Who Invested in a Paper Towel Company and a Revolving Door Factory?

Simplify each expression. Find the answer below and notice the two letters next to it. Write these letters in the two boxes above the exercise number at the bottom of the page.

(1) $7x^2 + 3x - x^2 = 6x^2 + 3x$ (ED)

(2) $(7x^2)(3x)(-x^2)$

(3) $(-2x^3)(5x)(-8x^4)$

(4) $x(3x^2)^3$

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

(6) $(2x^4)(-6x^3) + (9x)(3x^6)$

(7) $a^2 + b + a^2 + b^2 + b$

(8) $(-2a^3b)^4$

(9) $a^2(6a^3b)(ab^5)$

(10) $(4ab^3)(-5b^6)(2a^2)$

(11) $(3a^4b)(5ab^2) - (a^5b^2)(9b)$

(12) $(7a^2b^2)^2 + (ab)^4 - 50$

(13) $(8x^2y)(x^4y^3)^2$

(14) $2x(-5y^6)^3$

(15) $(xy^2)^3(x^2y)^2 + (x^3y^4)(x^2y^2)^2$

(16) $(-x^2)^5(-2x^2y^3)^3$

(17) $(4xy^7)(2x^4y) - (5x^3y^3)(-8x^2y^5)$

(18) $(3x^2)(3y^2) + 3x^2y - (3xy)^2 - 3xy^2$

Answers:

| | | | |
|---|---|---|---|
| (IN) | $80x^{11}$ | (OR) | $-100x^3$ |
| (SW) | $27x^7$ | (ED) | $6x^2 + 3x$ |
| (EC) | $-21x^5$ | (LA) | $36x^7$ |
| (HE) | $15x^7$ | (OU) | $80x^8$ |

Answers:

| | | | |
|---|---|---|---|
| (OU) | $6a^6b^6$ | (LD) | $2a^2 + b^2 + 2b$ |
| (ER) | $6a^7b^4$ | (RN) | $-40a^3b^9$ |
| (TB) | $16a^{12}b^4$ | (ND) | $50a^4b^4 - 50$ |
| (EH) | $6a^5b^3$ | (TO) | $-40a^4b^6$ |

Answers:

| | | | |
|---|---|---|---|
| (SO) | $18x^6y^9$ | (TU) | $48x^5y^8$ |
| (WA) | $8x^{10}y^7$ | (EF) | $-250xy^{18}$ |
| (HA) | $8x^{12}y^8$ | (IP) | $3x^2y - 3xy^2$ |
| (AR) | $2x^7y^8$ | (OU) | $8x^{16}y^9$ |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | E | D | | | | | | | | | | |
| 6 | 13 | 4 | 18 | 1 | 16 | 8 | 14 | 5 | 11 | 2 | 9 | 7 | 17 | 10 | 15 | 3 | 12 |