8-1 Pg. 489 (4-49)

(8) $3x^1$
degree = 1

(9) $8a^3$
degree = 3

(10) 20
can be written as $20x^0$ since $x^0 = 1$.
degree = 0

(11) $2b^8c^2$
degree = 10

(12) $-7y^3z^1$
degree = 4

(13) -3
can be written as $-3x^0$
degree = 0

(14) $12w^4$
degree = 4

(15) 0
no degree
0 is undefined if you raise it to a power!

(16) $12p^2 + 8p^2$
$20p^2$

(17) $2m^3n^3 + 9m^3n^3$
$11m^3n^3$

(18) $8w^2x + kw^2x$
↑ imaginary!
$9w^2x$

(19) $3t^4 + 11t^4$
$14t^4$

(20) $1x^3 - 9x^3$
↑ imaginary
$-8x^3$

(21) $30v^4w^3 - 12v^4w^3$
$18v^4w^3$

(22) $7x^2 - 2x^2$
$5x^2$

(23) $5bc^4 - 13bc^4$
$-8bc^4$

(24) $5y - 2y^2$
$-2y^2 + 5y$
degree = 2 (quadratic)
two terms (binomial)
quadratic binomial

(25) $-2q^1 + 7$
degree = 1 (linear)
two terms (binomial)
linear binomial

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

$x^2 - 3x + 4$

degree = 2 (quadratic)

3 terms (trinomial)

quadratic trinomial

(27) $6x^2 - 13x^2 - 4x + 4$

combine like terms

$-7x^2 - 4x + 4$

degree = 2 (quadratic)

3 terms (trinomial)

quadratic trinomial

(28) $c + 8c^3 - 3c^7$

$-3c^7 + 8c^3 + c$

degree = seventh degree

3 terms (trinomial)

Seventh degree trinomial

(29) $3z^4 - 5z - 2z^2$

$3z^4 - 2z^2 - 5z$

degree = 4

3 terms (trinomial)

fourth degree trinomial

(30) $4w - 5$

$+ 9w + 2$

$13w - 3$

(31) $6x^2 + 7$

$+ 3x^2 + 1$

$9x^2 + 8$

(32) $2k^2 - k + 3$

$+ 5k^2 + 3k - 7$

$7k^2 + 2k - 4$

(33) $(5x^2 + 3) + (15x^2 + 2)$

$20x^2 + 5$

(34) $(2g^4 - 3g^3 + 9) + (-g^3 + 12g)$

$2g^4 - g^3 + 9g + 9$

(35) $-11x^2 + 133x + 1200$

$-7x^2 + 95x + 1100$

$-18x^2 + 228x + 2300$

$-18(2^2) + 228(2) + 2300$

$-72 + 456 + 2300$

$= 2684$

Double check:

1) substitute a simple value in

$x = 2$

2) $-11(2^2) + 133(2) + 1200 =$

$-11(4) + 266 + 1200$

1422

$-7(2^2) + 95(2) + 1100$

$-28 + 190 + 1100$

1262

$1422 + 1262 = 2684$

(36)
$$\begin{array}{r} 5n-2 \\ -(3n+8) \\ \hline 2n-10 \end{array}$$

(37)
$$\begin{array}{r} 6x^3+17 \\ -(4x^3+9) \\ \hline 2x^3-8 \end{array}$$

(38)
$$\begin{array}{r} 2c^2+7c-1 \\ -(c^2-10c+4) \\ \hline 1c^2+17c-5 \end{array}$$

(39)
$$\begin{array}{r} 14h^4+3h^3 \\ -9h^4+2h^3 \\ \hline 5h^4+h^3 \end{array}$$

(40)
$$\begin{array}{r} -6w^4+0w^3+w^2+0w \\ -\quad 0w^4-2w^3+4w^2-w \\ \hline -6w^4+2w^3-3w^2+w \end{array}$$

(41)

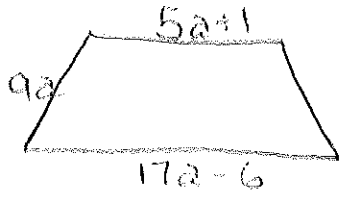
$2x+5+5x-1$

$7x+4$

$(16x+3)-(7x+4)$

$9x-1$

(42)



$P=39a-7$

$(39a-7)-(5a+1+17a-6+9a)$

$(39a-7)-(31a-5)$

$8a-2$

(43) $(4x^2-x+3)-(3x^2-5x-6)=4x^2-x+3-3x^2+5x+6$

$=4x^2-3x^2-x-5x+3+6$

$=x^2-6x-3$

Should be $-x--5x$

$-x+5x$

$4x$

*Should be x^2+4x+9

*didn't distribute the negative

$4x^2-x+3-3x^2+5x+6$

x^2+4x+9

(44) $5x^2 - 3x + 7x \Rightarrow 5x^2 + 4x$

$+ \; 9x^2 + 2x^2 + 7x \Rightarrow 11x^2 + 7x$

$16x^2 + 11x$

(45) $y^3 - 4y^2 - 2$

$- 6y^3 + 4 - 6y^2$

$\Rightarrow - y^3 - 4y^2 + 0y - 2$

$6y^3 - 6y^2 + 0y + 4$

$-5y^3 + 2y^2 + 0y - 6$

$\boxed{-5y^3 + 2y^2 - 6}$

(46) $-9r^3 + 0r^2 + 2r - 1$ * use zero placeholders!

$- \; 0r^3 - 5r^2 + r + 8$

$-9r^3 + 5r^2 + r - 9$

(47) $3z^3 + 7z^2 - 4z + 0$

$+ \; 0z^3 + 8z^2 - 6z - 5$

$3z^3 + 15z^2 - 10z - 5$

(48) a) Yes, when you add polynomials, you are combining like terms, so the sum is either a monomial or sum of monomials.

b) Yes, when you subtract polynomials, you combine like terms, so the difference is either a monomial or sum of monomials.

(49) a) $p(y = 2x - 1)$

$- \; q(y = \frac{1}{2} + 3)$

b) Distance $= \frac{3}{2}x - 4$

c) $0 = \frac{3}{2}x - 4$

$+4 \quad +4$

$\frac{2}{3} \cdot 4 = \frac{3}{2}x \cdot \frac{2}{3}$

$x = \frac{8}{3}$

d) x-coordinate for point of intersection