6.2 pass 1 even

(2) $x^{12} \cdot x^4 = x^{12+4} = x^{16}$

(4) $y \cdot y^{19} = y^{1+19} = y^{20}$

(6) $x^4 \cdot x^3 \cdot x^5 = x^{4+3+5} = x^{12}$

(8) $8^7 \cdot 8^{10} = 8^{7+10} = 8^{17}$

(10) $(6^7)^{10} = 6^{7 \cdot 10} = 6^{70}$

(12) $(x^{12})^4 = x^{12 \cdot 4} = x^{48}$

(14) $[(-50)^4]^4 = (-50)^{4 \cdot 4} = (-50)^{16}$

(16) $(4x)^3 = 4^3 x^3 = 64x^3$

(18) $(-6x)^2 = (-6)^2 \cdot x^2 = 36x^2$

(20) $(6x^3)^2 = 6^2 x^{3 \cdot 2} = 36x^6$

(22) $(-2y^5)^4 = (-2)^4 y^{5 \cdot 4} = 16y^{20}$

(24) $(-2x^{11})^5 = (-2)^5 x^{11 \cdot 5} = -32x^{55}$

(26) $(8x)(3x) = 8 \cdot 3 \cdot x \cdot x = 24x^2$

(28) $(10x)(3x^2) = 10 \cdot 3 \cdot x \cdot x^2 = 30x^{1+2} = 30x^3$

(30) $(-6y^4)(2y^3) = -6 \cdot 2 \cdot y^4 \cdot y^3 = -12y^{4+3} = -12y^7$

(32) $\left(-\frac{1}{3}a^4\right)\left(-\frac{1}{2}a^2\right) = \left(-\frac{1}{3}\right)\left(-\frac{1}{2}\right) a^4 a^2 = \frac{1}{6} a^{4+2} = \frac{1}{6} a^6$ or $\frac{a^6}{6}$

(34) $(3x^3)(-2x)(5x^6) = 3(-2)(5) x^3 \cdot x \cdot x^6 = -30x^{3+1+6} = -30x^{10}$

6.2 p.358 #35 / every other

(36) $6x(x+5)$
$= 6x^2 + 30$

(38) $x(x-7)$
$= x^2 - 7x$

(40) $3x(x-5)$
$= 3x^2 - 15x$

(42) $-5y(6y+7)$
$= -30y^2 - 35y$

(44) $5x^2(x+6)$
$= 5x^3 + 30x^2$

(46) $4y^2(y^2+2y)$
$= 4y^4 + 8y^3$

(48) $4y^2(5y^2 - 6y + 3)$
$= 20y^4 - 24y^3 + 12y^2$

(50) $(4x^3 + 5x^2)(2x)$
$= 8x^4 + 10x^3$

(52) $(x^3 - 2x + 2)(-4x)$
$= -4x^4 + 8x^2 - 8x$

(54) $-6x^2(3x^2 - 2x - 7)$
$= -18x^4 + 12x^3 + 42x^2$

(56) $(x+4)(x+6)$
$= x \cdot x + 6x + 4x + 4 \cdot 6$
$= x^2 + 10x + 24$

(58) $(2x+5)(x+3)$
$= 2x \cdot x + 2x \cdot 3 + 5x + 5 \cdot 3$
$= 2x^2 + 6x + 5x + 15$
$= 2x^2 + 11x + 15$

(60) $(x+4)(x-6)$
$= x \cdot x - 6x + 4x - 6 \cdot 4$
$= x^2 - 2x - 24$

(62) $(x-12)(x+8)$
$= x \cdot x + 8 \cdot x - 12 \cdot x - 12 \cdot 8$
$= x^2 - 4x - 96$

(64) $(3x-4)(x+5)$
$= 3x \cdot x + 3x \cdot 5 - 4 \cdot x - 4 \cdot 5$
$= 3x^2 + 15x - 4x - 20$
$= 3x^2 + 11x - 20$

(66) $\left(\frac{1}{5}x + 5\right)\left(\frac{3}{5}x - 1\right)$
$= \frac{1}{5}x \cdot \frac{3}{5}x + \frac{1}{5}x(-1) + 5\left(\frac{3}{5}x\right) + 5(-1)$
$= \frac{3}{25}x^2 - \frac{1}{5}x + \frac{15}{5}x - 5$
$= \frac{3}{25}x^2 - \frac{14}{5}x - 5$

6.2 p358 ev...

(68) $(x+2)(x^2+x+5)$

$= x\cdot x^2 + x\cdot x + x\cdot 5 + 2\cdot x^2 + 2\cdot x + 2\cdot 5$

$= x^3 + x^2 + 5x + 2x^2 + 2x + 10$

$= \boxed{x^3 + 3x^2 + 7x + 10}$

(70) $(y-2)(y^2-4y+3)$

$= y\cdot y^3 + y\cdot(-4y) + y\cdot 3 + -2(y^2) + (-4)(-4y) + -2(3)$

$= y^4 - 4y^2 + 3y - 2y^2 + 8y - 6$

$= \boxed{y^4 - 6y^2 + 11y - 6}$

(72) $(2a-1)(a^2-4a+3)$

$= 2a\cdot a^2 + 2a(-4a) + 2a(3) + (-1)(a^2) + (-1)(-4a) + (-1)(3)$

$= 2a^3 - 8a^2 + 6a - a^2 + 4a - 4$

$= \boxed{2a^3 - 9a^2 + 10a - 4}$

(74) $(x+1)(x^3+4x^2+7x+3)$

$= x\cdot x^3 + x\cdot 4x^2 + x\cdot 7x + x\cdot 3 + 1\cdot x^3 + 1\cdot 4x^2 + 1\cdot 7x + 1\cdot 3$

$= x^4 + 4x^3 + 7x^2 + 3x + x^3 + 4x^2 + 7x + 3$

$= \boxed{x^4 + 5x^3 + 11x^2 + 10x + 3}$

(76) $\left(x - \frac{1}{3}\right)(3x^3 - 6x^2 + 5x - 9)$

$= x\cdot 3x^3 + x(-6x^2) + x\cdot 5x + x(-9) + \left(-\frac{1}{3}\right)(3x^3) + -\frac{1}{3}(-6x^2) + \frac{1}{3}(5x) + \frac{1}{3}(-9)$

$= 3x^4 - 6x^3 + 5x^2 - 9x - x^3 + 2x^2 + \frac{5}{3}x - 3$

$= \boxed{3x^4 - 7x^3 + 7x^2 - \frac{32}{3}x - 3}$ (p3)

Note: $-9x - \frac{5}{3}x = -9\left(\frac{3}{3}\right)x - \frac{5}{3}x = -\frac{27}{3}x - \frac{5}{3}x = -\frac{32}{3}x$

6.2 p 350 even

(78) $(x^2+3x+1)(x^2-2x-1)$

$= x^2\cdot x^2 + x^2(-2x) + x^2(-1) + 3x(x^2) + 3x(-2x) + 3x(-1) + x^2 - 2x - 1$

$= x^4 - 2x^3 - x^2 + 3x^3 - 6x^2 - 3x + x^2 - 2x - 1$

$= x^4 - 2x^3 + 3x^3 - x^2 - 6x^2 + x^2 - 3x - 2x - 1$

$= \boxed{x^4 + x^3 - 6x^2 - 5x - 1}$

(80) $x^2 - 7x + 9$ times $x + 4$

$4x^2 - 28x + 36$

$x^3 - 7x^2 + 9x$

$\boxed{x^3 - 3x^2 - 19x + 36}$

(82) $y^2 - 5y + 3$ times $4y - 5$

$-5y^2 + 25y - 15$

$4y^3 - 20y^2 + 12y$

$\boxed{4y^3 - 25y^2 + 37y - 15}$

(84) $3y^3 + 2y^2 + y + 4$ times $y + 3$

$9y^3 + 6y^2 + 3y + 12$

$3y^4 + 2y^3 + y^2 + 4y$

$\boxed{3y^4 + 11y^3 + 7y^2 + 7y + 12}$

Note: (Last Scan)

6.2 p350 ex

(86) $5z^3 - 3z^2 + 4z - 3$

$2z - 4$

$-20z^3 + 12z^2 - 16z + 12$

$10z^4 - 6z^3 + 8z^2 - 6z$

$\boxed{10z^4 - 26z^3 + 20z^2 - 22z + 12}$

(88) $9y^3 - 7y^2 + 5y$

$3y^2 + 5y$

$45y^4 - 35y^3 + 25y^2$

$27y^5 - 21y^4 + 15y^3$

$27y^5 + 24y^4 - 20y^3 + 25y^2$

(90) $n^4 - n^3 + n^2 - n + 1$

$2n + 3$

$3n^4 - 3n^3 + 3n^2 - 3n + 3$

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

$\boxed{2n^5 + 5n^4 - n^3 + n^2 - n + 3}$

p 358 evens

(92)

$$\begin{array}{r} x^2 + 6x - 4 \\ x^2 - x - 2 \\ \hline -2x^2 - 12x + 8 \\ -x^3 - 6x^2 + 4x \\ x^4 + 6x^3 - 4x^2 \\ \hline x^4 + 5x^3 - 12x^2 - 8x + 8 \end{array}$$

(94) $(x+5)(x-6) - (x+2)(x-9)$

$= x^2 - 6x + 5x - 30 - (x^2 - 9x + 2x - 18)$

$= x^2 - x - 30 - (x^2 - 7x - 18)$

$= x^2 - x - 30 - x^2 + 7x + 18$

$= \boxed{6x - 12}$

p 378 even

(96) $3x^2(6x^3 + 2x - 3) - 4x^3(x^2 - 5)$

$= 18x^5 + 6x^3 - 9x^2 - (4x^5 - 20x^3)$

$= 18x^5 + 6x^3 - 9x^2 - 4x^5 + 20x^3$

$= \boxed{14x^5 + 26x^3 - 9x^2}$

(98) $(y+1)(y^2 - y + 1) - (y-1)(y^2 + y + 1)$

$= y^3 - y^2 + y + y^2 - y + 1 - (y^3 + y^2 + y - y^2 - y - 1)$

$= y^3 + 1 - (y^3 - 1)$

$= y^3 + 1 - y^3 + 1$

$= \boxed{2}$

(100) $(y+5)^2 - (y-4)^2$

$= (y+5)(y+5) - (y-4)(y-4)$

$= y^2 + 5y + 5y + 25 - (y^2 - 4y - 4y + 16)$

$= y^2 + 10y + 25 - (y^2 - 8y + 16)$

$= y^2 + 10y + 25 - y^2 + 8y - 16$

$= \boxed{18y + 9}$

(97)