R.3 Part 2

$$-2v^2(v^2 + 2v - 15)$$

(monomial)(trinomial)
↓   ↓
1 term   3 terms

(polynomial)
- more than 3

$$\boxed{-2v^4 - 4v^3 + 30v^2}$$

* distribute
the monomial

98

$$(z + 5)(z^2 - 5z + 25)$$

$$z^3 \boxed{-5z^2} + 25z \boxed{+5z^2} - 25z + 125$$

*

multiply
EVERY
term by
EVERY
term,
then combine
like terms *

$$z^3 + 125 \qquad cancels\ out$$

Almost #98

$$(x^2 + 2x + 1)(5x^2 - 6x + 4)$$

$$5x^4 \boxed{-6x^3} + 4x^2 \boxed{+10x^3} - 12x^2 + 8x + 5x^2 - 6x + 4$$

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

FOIL trick

$$(5 - 3)(5s + 4)$$

F.irst
O.uter
I.nner
L.ast

when you multiple a binomial by another binomial the result will be a trinomial

$$5s^2 - 11s - 12$$

Ⓐ $(x + 5)(5x - 7)$

$$5x^2 + 18x - 35$$

Ⓑ $(2x - 3)(5x + 4)$

$$10x^2 - 7x - 12$$

"difference of two squares"

Ⓒ $(x + 3)(x - 3)$

$$x^2 - 9$$

* conjugate pair *

Ⓓ $(5x + 4)(5x - 4)$

$$25x^2 - 16$$

(F) $(5x^3 - 7y^2)(3x^5 + 9y^8)$

$$\boxed{15x^8 + 45x^3y^8 - 21x^5y^2 - 63y^{10}}$$

x and y don't
combine so
they stay
like so

(#122)

$(11 - 3_R)(11 + 3_R)$

$$\boxed{121 - 9_R^2}$$

(#124)

$(p - \sqrt{2})(p + \sqrt{2})$

$p^2 - \sqrt{4}$

$$\boxed{p^2 - 2}$$

$\sqrt{2} \cdot \sqrt{2}$

$\sqrt{2 \cdot 2}$

$\sqrt{4}$

2

✱ a binomial^2
will ALWAYS
give you a

(#126)

$(A - 3)^2$

 # 33 $(x+y)^2 = \boxed{x^2 + 2xy + y^2}$

to get middle term multiply

$(x \cdot y)$ and double it!

EX. $(x+4)^2 = \boxed{x^2 + 8x + 16}$

EX. $(2x-5)^2 = \boxed{4x^2 - 20x + 25}$

EX. $(7xy^3 + 4w^{5\frac{o}{\lambda}})^2$

✳no matter the variable, you do it the same!

or $(7xy^3 + 4w^5 \frac{o}{\lambda})^2 =$

$\boxed{49x^2 y^6 + 56xy^3 w^5 \frac{o}{\lambda} + 16w^{10} \frac{o\lambda}{\lambda}}$

 # 132

$(\sqrt{x} + 7)^2$

$\boxed{x + 14\sqrt{x} + 49}$

✳ $\sqrt{\frac{o}{\lambda}} \cdot \sqrt{\frac{o}{\lambda}} = \frac{o}{\lambda}$

- the square root of anything times the square root of the same thing equals that SAME THING

(#136) $(a+6)(a-1)(a+5)$ ⟵ *FOIL, two of them, then solve the rest *

$(a+6)(a^2+4a-5)$

$a^3+4a^2-5a+6a^2+24a-30$

$$\boxed{a^3+10a^2+19a-30}$$

YOU CAN DO IT THIS WAY TOO

$$
\begin{array}{r}
a^2+4a-5 \\
\times \quad a+6 \\
\hline
6a^2+24a-30 \\
a^3+4a^2-5a \quad\quad \\
\hline
\end{array}
$$

$$\boxed{a^3+10a^2+19a-30}$$

HOMEWORK

R3. # 79-135 odds

Read and study R4.

Pg 33

trinomial or any trinomial → multiply like terms.

94) $(-2v^2)(v^2 + 2v - 15)$ monomial by a

$-2v^4 - 4v^3 + 30v^2$

98) $(z + 5)(z^2 - 5z + 25)$

$z^3 - 5z^2 + 25z + 5z^2 - 25z + 125$

$z^3 + 125$

almost
98) $(x^2 + 2x + 1)(5x^2 - 6x + 4)$

$5x^4 - 6x^3 + 4x^2 + 10x^3 - 12x^2 + 8x + 5x^2 - 6x + 4$

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

Binomial · Binomial

96) $(s - 3)(5s + 4)$
          $4s - 15s$

$5s^2 \quad -11s \quad -12$

$5s^2 - 11s - 12$

(foil) First Outer + Inner Last

(A) $(x + 5)(5x - 7)$

$5x^2 + 18x - 35$

(C) $(x + 3)(x - 3)$

$x^2 - 9$ a difference of 2 perfect squares

$(5x + 4)(5x - 4)$ (factor)

$25x^2 - 16$

1) $(5x^3 - 7y^2)(3x^5 + 9y^8)$

$15x^8 + 49x^3y^8 - 21y^2x^5 - 63y^{10}$

122) $(11 - 3r)(11 + 3r)$

$121 - 9r^2$

124) $(p - \sqrt{2})(p + \sqrt{2})$

$p^2 - \sqrt{4}$ $\sqrt{2} \cdot \sqrt{2}$

$p^2 - 2$ $\dfrac{\sqrt{2 \cdot 2}}{\sqrt{4}}$

                    2

126) $(a - 3)^2$

$(a - 3)(a - 3) =$

$a^2 - 6a + 9$

$$(x+y)^2 = x^2 + 2xy + y^2$$

$$(x+4)^2 = \boxed{x^2 + 8x + 16}$$

$x \cdot 4 = 4x \cdot 2$

$8x$

$$(2x-5)^2 = \boxed{4x^2 + 20x + 25}$$

$10x \cdot 2$

$$(7xy^3 + 4w^5z)^2$$

$$\boxed{14x^3y^5 + 56xyw^5z + 16w^7z^3}$$

132

$$(\sqrt{x} + 7)^2$$

$$(\sqrt{x} + 7)(\sqrt{x} + 7)$$

$\sqrt{x}\cdot\sqrt{x} + 49$

$x + 14\sqrt{x} + 49$

136 $(a+6)(a-1)(a+5)$

$(a-1)(a+5)$

$a^2 + 5a - a - 5$

$(a+6)(a^2 + 4a - 5)$

$a^3 + 4a^2 - 5a + 6a^2 + 24a - 30$

$$\boxed{a^3 + 10a^2 + 19a - 30}$$

✳ Homework 79 – 135 odd ✳
Read & study R 4