

What's Going On?

Checking In

Minds on

Practice Test Take Up

Action!

Peer Review

Consolidation

The Big One

Learning Goal - I will be ready for Tomorrow's Test.

Practice Test Take Up?

2. Simplify

a) $4(x - 3)$

$$= 4x - 12$$

b) $(2x - 2) + (3x + 1)$

$$= \underline{2x} - \underline{2} + \underline{3x} + \underline{1}$$

$$= 5x - 1$$

Practice Test Take Up?

2. Simplify

c) $\frac{18y^3}{3y^1}$

$$= 6y^2$$

d) $(x + 3)^2$

$$\begin{aligned} &= (x+3)(x+3) \\ &= x^2 + 6x + 9 \end{aligned}$$

Practice Test Take Up?

3. Factor this!

a) $5x - 10$

$$= 5(x - 2)$$

b) $4a^2 - 24ab$

$$= 4a(a - 6b)$$

↑
bee

Practice Test Take Up?

3. Factor this!

c) $x^2 + 8x + 15$

$$(x+5)(x+3)$$

$$-m^2 + 25$$
$$-1(m^2 - 25)$$

d) $m^2 - 25$

$$= (m+5)(m-5)$$

Application

1. Expand and Simplify!!

a) $3(x^2 - 4x + 7) - (x + 2)^2$

$$= (3x^2 - 12x + 21) - (x^2 + 4x + 4)$$

$$= 2x^2 - 16x + 17$$

Application

1. Expand and Simplify!!

b) $(-3x^2y^2)(-2y^3)(-4x^3y)$

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

$$= -24x^5y^6$$

Application

1. Expand and Simplify!!

$$\text{c) } \frac{-25k^3g^2}{-5k^2g} = 5kg$$

Application

1. Expand and Simplify!!

d) $(5x - 2)(x + 3) - (2x - 9)(3x - 2)$

$$= (5x^2 + 15x - 2x - 6) - (6x^2 - 4x - 27x + 18)$$

$$= 5x^2 + 13x - 6 - 6x^2 + 31x - 18$$

$$= -x^2 + 44x - 24$$

Application

1. Expand and Simplify!!

$$\begin{aligned} \text{e) } & (x - 8)^2 + 3(2x + 1)^2 \\ & = (x - 8)(x - 8) + 3(2x + 1)(2x + 1) \\ & = x^2 - 8x - 8x + 64 + 3(4x^2 + 4x + 1) \\ & = x^2 - 16x + 64 + 12x^2 + 12x + 3 \\ & = x^2 + 12x^2 - 16x + 12x + 64 + 3 \\ & = 13x^2 - 4x + 67 \end{aligned}$$

Application

2. Factor this!!! (If possible)

$$\begin{aligned} \text{a) } & 54x^2y^4 + 18xy^2 \\ & = 18xy^2(3xy^2 + 1) \end{aligned}$$

Application

2. Factor this!!! (If possible)

$$\begin{aligned} \text{b) } & \overbrace{ab + 3a} + \overbrace{b + 3} \\ & = a(b+3) + 1(b+3) \\ & = (b+3)(a+1) \end{aligned}$$

$$\begin{aligned} & \overbrace{xy + 5x} - 3y - 15 \\ & = x(y+5) + 3(-y-5) \\ & = x(\underline{y+5}) - 3(\underline{y+5}) \\ & = (y+5)(x-3) \end{aligned}$$

Application

2. Factor this!!! (If possible)

$$\begin{array}{l} \text{c) } \overset{3x}{\circlearrowleft} 9x^2 - 24x + \overset{4}{\circlearrowleft} 16 \\ = (3x-4)^2 \end{array}$$

$$\begin{array}{l} \pm 2(3x)(4) \\ = \pm 24x \quad \checkmark \end{array}$$

$$= (3x-4)(3x-4)$$

Application

2. Factor this!!! (If possible)

d) $b^2 - \underline{9b} - 22$

$$= (b - 11)(b + 2)$$

Application

2. Factor this!!! (If possible)

e) $6x^2 + 11x - 7$

Two integers that multiply to (6×-7) and add to -11 ?

→ The integers are $+14$ and -3

$$= \underline{6x^2 - 3x} + \underline{14x - 7}$$

$$= 3x(2x-1) + 7(2x-1)$$

$$= (2x-1)(3x+7)$$

Application

2. Factor this!!! (If possible)

f) $x^2 + 5xy - 14y^2$

$$= (x + 7y)(x - 2y)$$

Find two integers
that multiply
to -14 and add
to $+5$.

Application

2. Factor this!!! (If possible)

g) $-2x^2 + 18x - 40$

$$= -2(x^2 - 9x + 20)$$

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

Application

2. Factor this!!! (If possible)

What about...

h) $x^4 + 16$

cannot
be factored

h*) $-x^4 + 16$

$$\begin{aligned} &= -(x^4 - 16) \\ &= -(x^2 + 4)(x^2 - 4) \\ &= -(x^2 + 4)(x + 2)(x - 2) \end{aligned}$$

Application

2. Factor this!!! (If possible)

i) $162m^3 - 50mn^2$

$$= 2m(81m^2 - 25n^2)$$

$$= 2m(9m + 5n)(9m - 5n)$$

Application

2. Factor this!!! (If possible)

j) $2x^2 - 7x + 3$

$$= \underline{2x^2 - 6x} - x + 3$$

$$= 2x(x-3) + 1(-x+3)$$

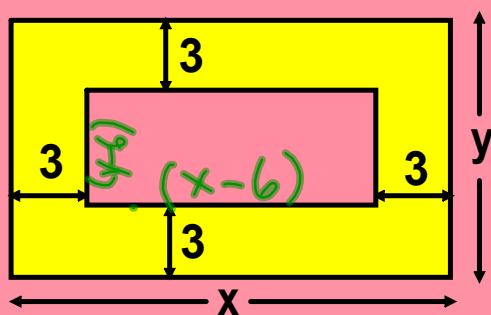
$$= 2x(\underline{x-3}) - 1(\underline{x-3})$$

$$= (x-3)(2x-1)$$

Two integers that multiply
to 6 and add to
-7. $\rightarrow -6, -1$

Application

3. Write an expression for the area of the shaded region as a polynomial and then in factored form.



$$\begin{aligned}
 &= xy - (x-6)(y-6) \\
 &= xy - (xy - 6x - 6y + 36) \\
 &= \cancel{xy} - \cancel{xy} + 6x + 6y - 36 \\
 &= 6(x+y-6)
 \end{aligned}$$

Action!

Peer Review I

Factor if possible.

$$2m^2 - 4mn - 6n^2$$

Action!

Peer Review II

Factor if possible.

$$-12x^2 + 40xy - 32y^2$$

Consolidation

Factor $6x^4 - 9x^2 - 60$

1. Common Factor $= 3(2x^4 - 3x^2 - 20)$

2. Find two integers that multiply to -40 and sum to -3 .

$$\boxed{-8 \text{ and } 5}$$

3. Break up the middle term.

$$= 3(2x^4 - 8x^2 + 5x^2 - 20)$$

4. Factor by grouping.

$$= 3[2x^2(\underbrace{x^2 - 4}) + 5(\underbrace{x^2 - 4})]$$

5. Check to see if any of our new polynomials can be factored.

$$= 3(\underbrace{x^2 - 4}_{\text{diff. of } \square_s})(2x^2 + 5)$$

$$= 3(x+2)(x-2)(2x^2+5)$$

Consolidation

Homework

Need Extra Practice?

Review: Pg 174 - 179
(broken down by section)

Chapter Test: Pg 180 - 181