

Happy Friday! :) Please reflect and turn in.

	Assignment Effort Grade (Circle One)	Comments (What was interesting or challenging?)
Monday Date: <u>3/5</u> Topic: _____	0 1 2	No Homework (Test Friday)
Tuesday Date: <u>3/6</u> Topic: _____	0 1 2	
Wednesday Date: <u>3/7</u> Topic: <u>21A Quadratic Functions</u>	0 1 2	
Thursday Date: <u>3/8</u> Topic: <u>Distributive Property</u>	0 1 2	
Friday Date: <u>3/9</u> Topic: <u>Product Rule of polynomials</u>	0 1 2	

Warm-up: Expand and simplify.

$$(x + 8)(x - 2)$$

$$\square : x \cdot x = x^2$$

$$O : x(-2) = -2x$$

$$I : 8 \cdot x = 8x$$

$$L : 8(-2) = -16$$

	x	8
x	x^2	$8x$
-2	$-2x$	-16

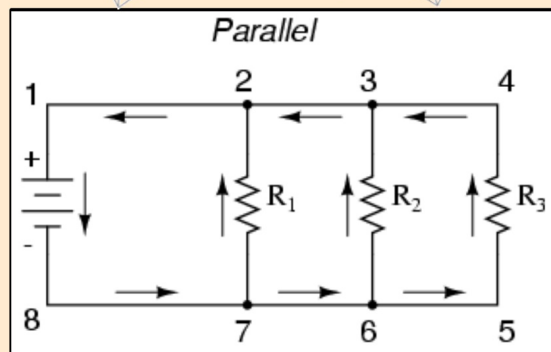
$$x^2 + 6x - 16$$

You need:

- Notebooks
- Pencils
- Growth Mindset

a $(3x + 5)(2x - 3)$

CIRCUIT



1. Start anywhere
 - Orange is Challenging
 - Blue is More Challenging

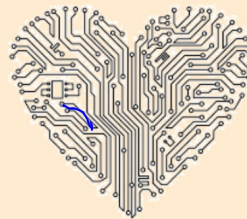
2. Answers are in front,
Problems are the 2nd page

3. Distribute / Expand. Where's the answer?

4. Do the problem under your answer.

Keep going until you've completed the circuit!

The word "CIRCUIT" is written in a bold, black, sans-serif font. The letters are connected to a network of thin, grey lines that form a complex, geometric pattern resembling a circuit board or a neural network. The lines extend from the letters and connect to small circles at various points, creating a sense of connectivity and flow.



Can't find your answer?
Check for mistakes and ASK for help.

Exercises

4C: Choose **two** letters from each problem.

4D: Choose **one** letter from each problem.

EXERCISE 4C

1 Expand and simplify using the rule $(a + b)(a - b) = a^2 - b^2$:

a $(x + 3)(x - 3)$

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

c $(3 + x)(3 - x)$

e $(x + 2)(x - 2)$

f $(2 - x)(2 + x)$

g $(x + 6)(x - 6)$

2 Expand and simplify:

a $(2x + 1)(2x - 1)$

b $(5x + 2)(5x - 2)$

d $(3b + 5)(3b - 5)$

e $(4x + 1)(4x - 1)$

3 Expand and simplify:

a $(3a + b)(3a - b)$

b $(a - 3b)(a + 3b)$

d $(5x + 2y)(5x - 2y)$

e $(4x + 5y)(4x - 5y)$

zero → 1 **Binomial Theorem!!!**
 1 → 1 1
 2 → 1 2 1
 3 → 1 3 3 1
 4 → 1 4 6 4 1

$$\begin{aligned}
 (a + b)^0 &= 1 \\
 (a + b)^1 &= 1a + 1b \\
 (a + b)^2 &= 1a^2 + 2ab + 1b^2 \\
 (a + b)^3 &= 1a^3 + 3a^2b + 3ab^2 + 1b^3 \\
 (a + b)^4 &= 1a^4 + 4a^3b + 6a^2b^2 + 4ab^3 + 1b^4 \\
 (a + b)^5 &= 1a^5 + 5a^4b + 10a^3b^2 + 10a^2b^3 + 5ab^4 + 1b^5
 \end{aligned}$$

Exercises **EXERCISE 4D**

3 Expand and simplify:

a $(x + 2)^2$

b $(x + 5)^2$

4 Expand and simplify:

a $(x - 4)^2$

b $(x - 2)^2$

5 Expand and simplify:

a $(2x + 3)^2$

b $(4a - 1)^2$

7 Expand and simplify:

a $2x + 1 - (x + 2)^2$

c $(x + 4)(x - 4) + (x + 1)^2$

Exercise Solutions

EXERCISE 4C

- | | | | | |
|---|------------------|-------------------|------------------|--------------|
| 1 | a $x^2 - 9$ | b $x^2 - 9$ | c $9 - x^2$ | d $9 - x^2$ |
| | e $x^2 - 4$ | f $4 - x^2$ | g $x^2 - 36$ | h $a^2 - 16$ |
| | i $b^2 - 1$ | j $p^2 - q^2$ | k $25 - n^2$ | l $49 - y^2$ |
| 2 | a $4x^2 - 1$ | b $25x^2 - 4$ | c $16a^2 - 9$ | |
| | d $9b^2 - 25$ | e $16x^2 - 1$ | f $1 - 16x^2$ | |
| | g $49 - 4y^2$ | h $9 - 4x^2$ | i $9x^2 - 4$ | |
| 3 | a $9a^2 - b^2$ | b $a^2 - 9b^2$ | c $36x^2 - y^2$ | |
| | d $25x^2 - 4y^2$ | e $16x^2 - 25y^2$ | f $4x^2 - 49y^2$ | |

$$(4x+1)(4x-1)$$

$$16x^2 - 4x + 4x - 1$$

$$(3a+b)(3a-b) = (x+2)^2$$

$$9a^2 - 3ab + 3ab - b^2 = x^2 + 4x + 4$$

$$9a^2 - b^2$$

EXERCISE 4D

- | | | | | |
|---|--|---|---------------------|---------|
| 1 | a a^2 | b ab | c ab | d b^2 |
| | e $a^2 + 2ab + b^2$ | Conclusion: $(a+b)^2 = a^2 + 2ab + b^2$ | | |
| 2 | a $(5+3)^2 = 8^2 = 64$ | b $5^2 + 3^2 = 25 + 9 = 34$ | | |
| | b $5^2 + 2 \times 5 \times 3 + 3^2 = 25 + 30 + 9 = 64$ | | | |
| 3 | a $x^2 + 4x + 4$ | b $x^2 + 10x + 25$ | c $a^2 + 8a + 16$ | |
| | d $y^2 + 12y + 36$ | e $1 + 2b + b^2$ | f $4 + 4x + x^2$ | |
| 4 | a $x^2 - 8x + 16$ | b $x^2 - 4x + 4$ | c $a^2 - 14a + 49$ | |
| | d $b^2 - 16b + 64$ | e $9 - 6x + x^2$ | f $25 - 10y + y^2$ | |
| 5 | a $4x^2 + 12x + 9$ | b $16a^2 - 8a + 1$ | c $9y^2 + 30y + 25$ | |
| | d $9a^2 - 24a + 16$ | e $4x^2 - 28x + 49$ | | |
| | f $64 + 48a + 9a^2$ | g $4 + 20b + 25b^2$ | | |
| | h $36 - 60x + 25x^2$ | i $16 - 40y + 25y^2$ | | |