Name_____

Polynomial House Project

Part 1 - Polynomial Operations
- On a separate sheet of paper, determine the perimeter and area of each room.
- Your work must be clearly numbered and neat. Answers must be in simplified form.
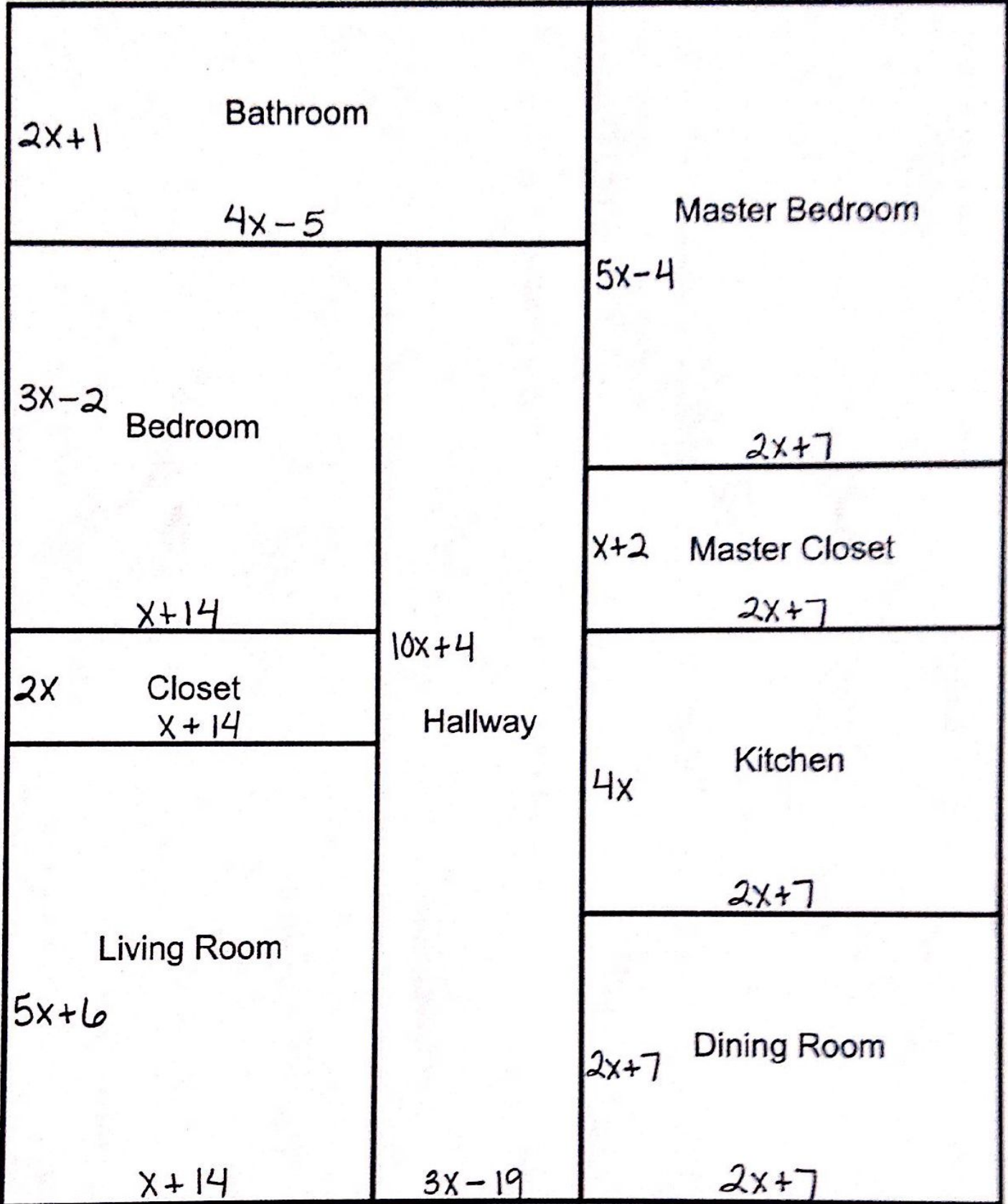- All answers are polynomial expressions.

Part 2 - Evaluating Polynomials
- On a separate sheet of paper, work each of the questions below.
- Your work must be clearly numbered, labeled and neat.

1) The perimeter of the bedroom and the perimeter of the bathroom are exactly the same. Write an equation to represent that the perimeters are equal.

2) Solve the equation you wrote for x.

3) Using the polynomial answers from Part 1, substitute x into each to find the perimeter and area of each room.

4) You want to put carpet in the Master Bedroom, the Master Closet, the Bedroom, the Closet, and the Living Room. You checked with various stores and found that the best deal was given by a company who will charge you $3.49 per square foot. Calculate the total cost for carpeting these rooms.

5) You want to put vinyl flooring in the Bathroom. You checked with various stores and found that the best deal was given by a company who will charge you $3.79 per square foot. Calculate the total cost for the vinyl flooring.

6) You want to put hardwood flooring in the Hallway. You checked with various stores and found that the best deal was given by a company who will charge you $5.99 per square foot plus an additional $375 for labor. Calculate the total cost for the hardwood flooring.

7) You want to put ceramic tile flooring in your Kitchen and Dining Room. You checked with various stores and found that the best deal was given by a company who will charge you $3.00 per square foot plus an additional $320 for labor. Calculate the total cost for the ceramic tile flooring.

Part 3 - Factoring Polynomials
- On a separate sheet of paper, use factoring to determine the sides of each area of the backyard. Then determine the perimeter.
- Your work must be clearly numbered and neat. Answers must be in simplified form.

Bathroom

$2x+1$

$4x-5$

Master Bedroom

$5x-4$

$3x-2$ **Bedroom**

$2x+7$

$x+14$

$x+2$ **Master Closet**

$2x$ **Closet**

$x+14$

$2x+7$

$10x+4$

Hallway

$4x$ **Kitchen**

Living Room

$5x+6$

$2x+7$

$2x+7$ **Dining Room**

$x+14$

$3x-19$

$2x+7$

Part 1 - Polynomial Operations

This is your answer sheet!!! All work should be done on separate paper and stapled to the back of this sheet. Only your answers should be written on this sheet. All work must be shown for each problem and numbered appropriate. No credit will be given for answers that do not have the correct corresponding work.

	Area	Perimeter
Living Room	1)	2)
Closet	3)	4)
Bedroom	5)	6)
Bathroom	7)	8)
Master Bedroom	9)	10)
Master closet	11)	12)
Kitchen	13)	14)
Dining Room	15)	16)
Hallway	17)	18)
Kitchen and Dining Room	19)	20)
Living Room, Closet, and Bedroom	21)	22)

Part 2 - Evaluating Polynomials

Equation: _____

Solution to equation: x = _____

	Area	Perimeter
Living Room	1)	2)
Closet	3)	4)
Bedroom	5)	6)
Bathroom	7)	8)
Master Bedroom	9)	10)
Master closet	11)	12)
Kitchen	13)	14)
Dining Room	15)	16)
Hallway	17)	18)

Total cost for carpeting:_____

Total cost for vinyl flooring:_____

Total cost for hardwood flooring:_____

Total cost for ceramic tile flooring:_____

Pool

$A = 3x^2 - 2x - 16$

Shed

$A = 8x^2 - 12x$

Doghouse

$A = 9x^2 - 1$

Garden

$A = 12x^2 + 37x + 21$

Playset

$A = x^2 + 9x - 10$

Part 3 - Factoring Polynomials

This is your answer sheet!!! All work should be done on separate paper and stapled to the back of this sheet. Only your answers should be written on this sheet. All work must be shown for each problem and numbered appropriate. No credit will be given for answers that do not have the correct corresponding work.

Room	Dimensions	Perimeter
Pool	1)	2)
Shed	3)	4)
Doghouse	5)	6)
Playset	7)	8)
Garden	9)	10)