STUDENT COMPANION

Name:_____

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PART ONE

Think e Matics

Mind Check

ITD : SC 1

Meet Mr. Tyson Morgan

1. **In paragraph 1, the author states Tyson is the main "principal" of one of the top architectural firms in the United States. According to the text, the term "principal" can be defined as which of the following?**

a.) a licensed architect that is either the sole proprietor of a firm or shares ownership with other architects in a firm.

b.) a licensed architect that designs groundbreaking modern structures.

c.) an architect that is not licensed but can be the sole proprietor of a firm.

d.) licensed architect that develops groundbreaking concepts and structures and claims no ownership in a firm.

2. **In paragraph 2, the author states "Tyson knew from a very young age that architecture was in his future." According to the text which of the following is attributed to Tyson's future greatness?**

a.) Tyson's mother told Tyson his vision of the future would lead him to greatness.

b.) Tyson's use of block play served as a valuable learning tool influencing his future architectural style.

c.) Tyson graduating high school as the valedictorian.

d.) Tyson's inspirational graduation speech leaving no doubt in the minds of the audience that he was heading towards greatness.

Building blocks, a simple toy, inspired Tyson and influenced his current modern architectural style. What other toys could inspire young, budding architects and designers? Construct a list of ten toys that could benefit architects of the future. Explain why you believe each toy would be beneficial.

Toy	Explanation

Mind Check ITD : SC 2
So Why Do We Need Architects?

1. According to paragraph 2, which of the following is true?

a.) Architects will work with you to find the best design solution for a project.

b.) Architects insight and creative skills can deliver value well more than the fees they charge.

c.) Architects insight can help stretch the budget for a project and add value to the project.

d.) All of the above

2. What is the central idea of "So Why Do We Need Architects?"

a.) Architects are considered experiences due to their certification with the Architects Registration Board.

b.) Architects save a customer money on their construction project.

c.) Architects will do all the hard work, especially with the daunting mountain of paperwork for the construction project.

d.) Architects use all of their skills to help a customer achieve their aspirations and guide them through the construction process.

3. In paragraph 2, the author states "A *daunting* mo untain of paperwork awaits anyone undertaking a buil ding project, but an architect can help make a mole hill of it." What does the word daunting mean?

a.) delightful

b.) dreadful

c.) advantageous

d.) gratifying

Why as a society do we need architects? Respond to this question in paragraph form. Your paragraph must contain the following elements:

- a topic sentence
- 3 supporting details (use evidence from the text to support your opinion)
- a concluding sentence

How Did Tyson Become an Architect?

Mind Check

ITD:SC 3

How Did Tyson Become an Architect?

1. Analyze Tyson's timeline to becoming an architect. After Tyson graduated from high school, approximately how long did it take Tyson to earn his Master's Degree in Architecture?

a.) Approximately 14 years

b.) Approximately 5 years

c.) Approximately 8 years

d.) Approximately 10 years

2. Which of the following DOES NOT best describe Tyson on his road to becoming a licensed architect?

a.) determined

b.) ambitious

c.) assiduous

d.) irresolute

3. The "Did You Know?" states that the median salary for architects is $76,500. Which of the following best describes the meaning of a median salary?

a.) The average of all licensed architects' salaries.

b.) Half of the architects earn below that salary and the other half earns more than that salary.

c.) Most architects in the field make that salary.

d.) The spread of all the architect's salaries in relation to the average.

7

In your opinion, was Tyson's journey to becoming an architect easy or difficult? Your response should be in paragraph form. Utilize the timeline above to help you draw conclusions to support your opinion. Your paragraph must include a topic sentence, followed by 4-5 supporting details, and a concluding sentence.

BONUS

Using the letters T-Y-S-O-N M-O-R-G-A-N, write an adjective corresponding to each letter that best describes Tyson. Utilize the timeline to help you brainstorm possible adjectives for your acrostic.

	Adjective
T	
Y	
S	
O	
N	

	Adjective
M	
0	
R	
G	
A	
N	

What do you think your future looks like? Think about your future in the context of a timeline, beginning with your current grade. Illustrate a timeline with visual benchmarks. As you illustrate your timeline, think about what you might be doing as you move through high school, then beyond high school and what might come at the end of your timeline- jobs, degrees, and so on. It is fine not to have a particular end in mind, because reflecting and planning allows a future vision to take shape over time.

Construct your timeline below.

You may have pointed out that college or another type of educational training option made it to your timeline. Construct a bulleted list of five benefits of attending college or other type of educational/training programs.

- **1.**
- **2.**
- **3.**
- **4.**
- **5.**

What type of challenges may play out as your life progresses through your planned timeline? What guidance and support systems can help you through any challenges that you may encounter? Construct a table with two columns and six rows. In the left column, list five possible challenges. In the right column, list corresponding guidance or supports than can help you through the listed challenges.

Challenge	Support

PART TWO

Think e Matics

Meeting Your Mentor

Part One

ITD:SC 4

Meeting Your Mentor

Part One

Complete the table below by translating the dimensions for each room on the lower level from words to algebraic language.

Room	Algebraic Language			Translated Dimensions		
Living Room	four more than three times a number	**BY**	three times a number	3x + 4	**BY**	3x
Kitchen	six more than two times a number	**BY**	six more than two times a number		**BY**	
Bedroom	four less than four times a number	**BY**	eight less than three times a number		**BY**	
Dining Room	two less than three times a number	**BY**	twenty-two less than five times a number		**BY**	
Foyer	six more than a number	**BY**	six more than three times a number		**BY**	
Bathroom	two less than two times a number	**BY**	two more than a number		**BY**	

1. Translate the following for the:

Living Room

four more than three times a number by three times a number

a.) 3x + 4 by 3x + 4

b.) 3x + 4 by 3x

c.) 4 by 3x

d.) 3x by 3x - 4

2. Translate the following for the:

Kitchen

six more than two times a number by six more than two times a number

a.) 6- 2x by 6-2x

b.) 2x by 2x + 6

c.) 6x + 2 by 6x + 2

d.) 2x + 6 by 2x + 6

3. **Translate the following for the:**

Bedroom

four less than four times a number by eight less than three times a number

a.) 4x + 4 by 8x

b.) x + 4 by 8x + 3

c.) 4x – 4 by 3x - 8

d.) x – 4 by 3x - 8

4. **Translate the following for the:**

Dining Room

two less than three times a number by twenty-two less than five times a number

a.) 3x – 2 by 5x - 22

b.) 2x + 3 by 22x + 5

c.) 3x -2 by 22x + 5

d.) 2x – 3 by 5x - 22

5. **Translate the following for the:**

Foyer

six more than a number by 6 more than three times a number

a.) x + 6 by 6x + 3

b.) x + 6 by 3x + 6

c.) 6x + x by 3x + 6

d.) x + 6 by x + 6

6. **Translate the following for the:**

Bathroom

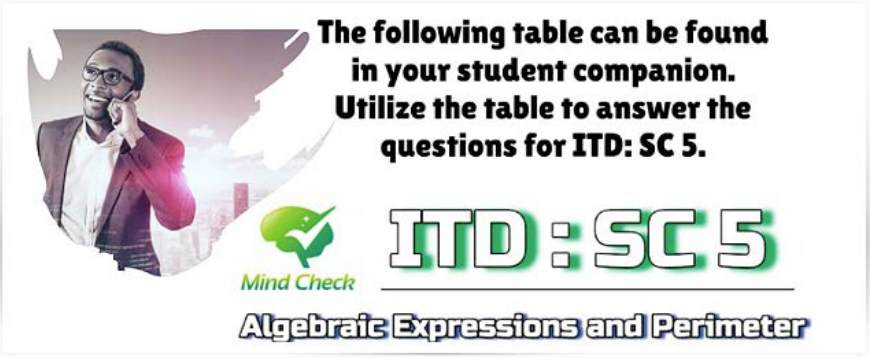
two less than two times a number by two more than a number

a.) 2x – 2 by x + 2

b.) 2x + 2 by x + 2

c.) x + 2 by 2x + 2

d.) 2x – 2 by 2x + 2



Complete the following table by calculating the perimeter of each room by adding and subtracting algebraic expressions.

Room	Perimeter
Living Room	12x + 8
Kitchen	
Bedroom	
Dining Room	
Foyer	
Bathroom	

1. Calculate the perimeter of the kitchen by adding and subtracting algebraic expressions.

a.) 4x + 24

b.) 4x + 12

c.) 8x + 12

d.) 8x + 24

2. Calculate the perimeter of the bedroom by adding and subtracting algebraic expressions.

a.) 14x - 24

b.) 8x

c.) 7x - 12

d.) 7x - 24

3. **Calculate the perimeter of the dining room by adding and subtracting algebraic expressions.**

a.) 8x - 24

b.) 16x - 48

c.) 8x - 24

d.) 24x - 48

4. **Calculate the perimeter of the foyer by adding and subtracting algebraic expressions.**

a.) 8x + 24

b.) 4x - 12

c.) 8x - 12

d.) 4x + 16

5. **Calculate the perimeter of the bathroom by adding and subtracting algebraic expressions.**

a.) 8x

b.) 6x + 4

c.) 6x

d.) 6x – 4

6. **The perimeter of the bathroom is 48 feet.**

Utilizing the perimeter of the bathroom expressed as an algebraic expression (6x), calculate the value of x. Therefore, solve the following simple equation: $6x = 48$.

a.) x = 7

b.) x= 8

c.) x= 10

d.) x= 6

The following table can be found in your student companion. Complete the table by utilizing the value you calculated for x on the last question for ITD: SC 5. Substitute the value of x into each expression to find the actual dimensions in feet.

Mind Check

ITD : SC 6

Evaluating Algebraic Expressions with Variables

Room	Algebraic Expressions			Actual Dimensions (feet)		
Living Room		BY			BY	
Kitchen		BY			BY	
Bedroom		BY			BY	
Dining Room	3x - 2	BY	5x - 22	22 feet	BY	18 feet
Foyer		BY			BY	
Bathroom		BY			BY	

1. **Which of the following are the actual dimensions in feet for the living room?**

a.) 25 feet by 21 feet

b.) 22 feet by 18 feet

c.) 34 feet by 22 feet

d.) 28 feet by 24 feet

2. **Which of the following are the actual dimensions in feet for the kitchen?**

a.) 20 feet by 20 feet

b.) 22 feet by 22 feet

c.) 18 feet by 18 feet

d.) 24 feet by 18 feet

3. **Which of the following are the actual dimensions in feet for the bedroom?**

a.) 28 feet by 16 feet

b.) 20 feet by 10 feet

c.) 36 feet by 22 feet

d.) 24 feet by 18 feet

4. **Which of the following are the actual dimensions in feet for the foyer?**

a.) 12 feet by 22 feet
b.) 16 feet by 36 feet
c.) 14 feet by 30 feet
d.) 18 feet by 40 feet

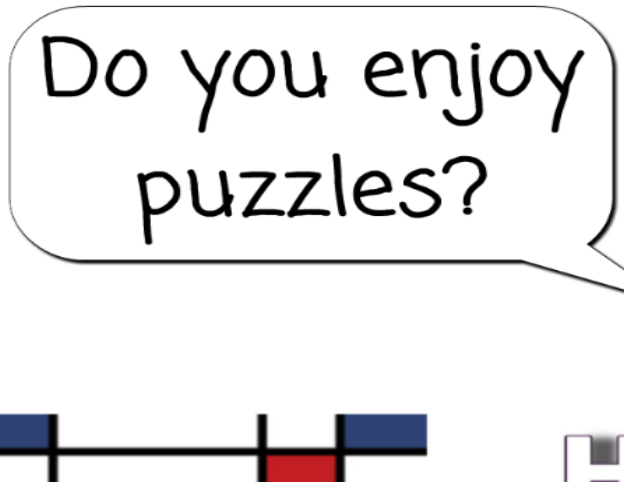
5. **Which of the following are the actual dimensions in feet for the bathroom?**

a.) 14 feet by 10 feet

b.) 10 feet by 8 feet

c.) 18 feet by 12 feet

d.) 12 feet by 8 feet



House of Rectangles

Room	Algebraic Language			Translated Dimensions		
Living Room	four more than three times a number	BY	three times a number	3x + 4	BY	3x
Kitchen	six more than two times a number	BY	six more than two times a number		BY	
Bedroom	four less than four times a number	BY	eight less than three times a number		BY	
Dining Room	two less than three times a number	BY	twenty-two less than five times a number		BY	
Foyer	six more than a number	BY	six more than three times a number		BY	
Bathroom	two less than two times a number	BY	two more than a number		BY	

Room	Algebraic Expressions			Actual Dimensions (feet)		
Living Room		BY			BY	
Kitchen		BY			BY	
Bedroom		BY			BY	
Dining Room	3x - 2	BY	5x - 22	22 feet	BY	18 feet
Foyer		BY			BY	
Bathroom		BY			BY	

4 Extend Your Thinking

It's in the Design

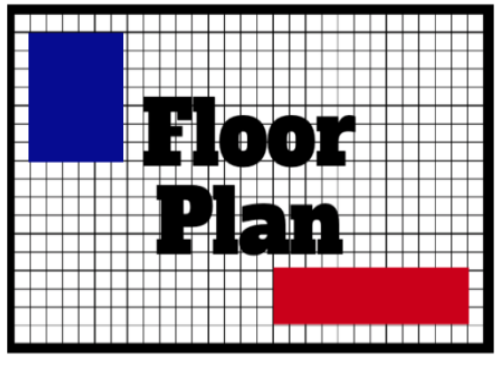
Utilizing the dimensions calculated in feet, determine the layout of the House of Rectangles.

WHAT DO YOU NEED TO KNOW?

- All six rectangular rooms can be arranged to fit perfectly within the House of Rectangles floor plan.
- You will need a ruler, 0.5 cm grid paper, and scissors.
- Using a scale of 1 unit (block) = 2 feet, make all six rectangles separately on your grid paper. **Make sure you label each rectangle with its corresponding room.**

Finally.....

- Cut out all six rectangles neatly. Now you have a six piece puzzle! Remember all six rectangles will fit together and make a rectangle!



Think e Matics

BONUS

Now you are going to construct a diagram of a wrap-around porch on the lower-level of the home. The porch design must be an irregular figure.

- **Using the same value of *X* calculated for the lower level, determine the perimeter of your wrap-around porch in feet.**
- **Label the dimensions of the porch using algebraic expressions.**
- **Write an equation that could be used to calculate the perimeter of the wrap-around porch in feet.**

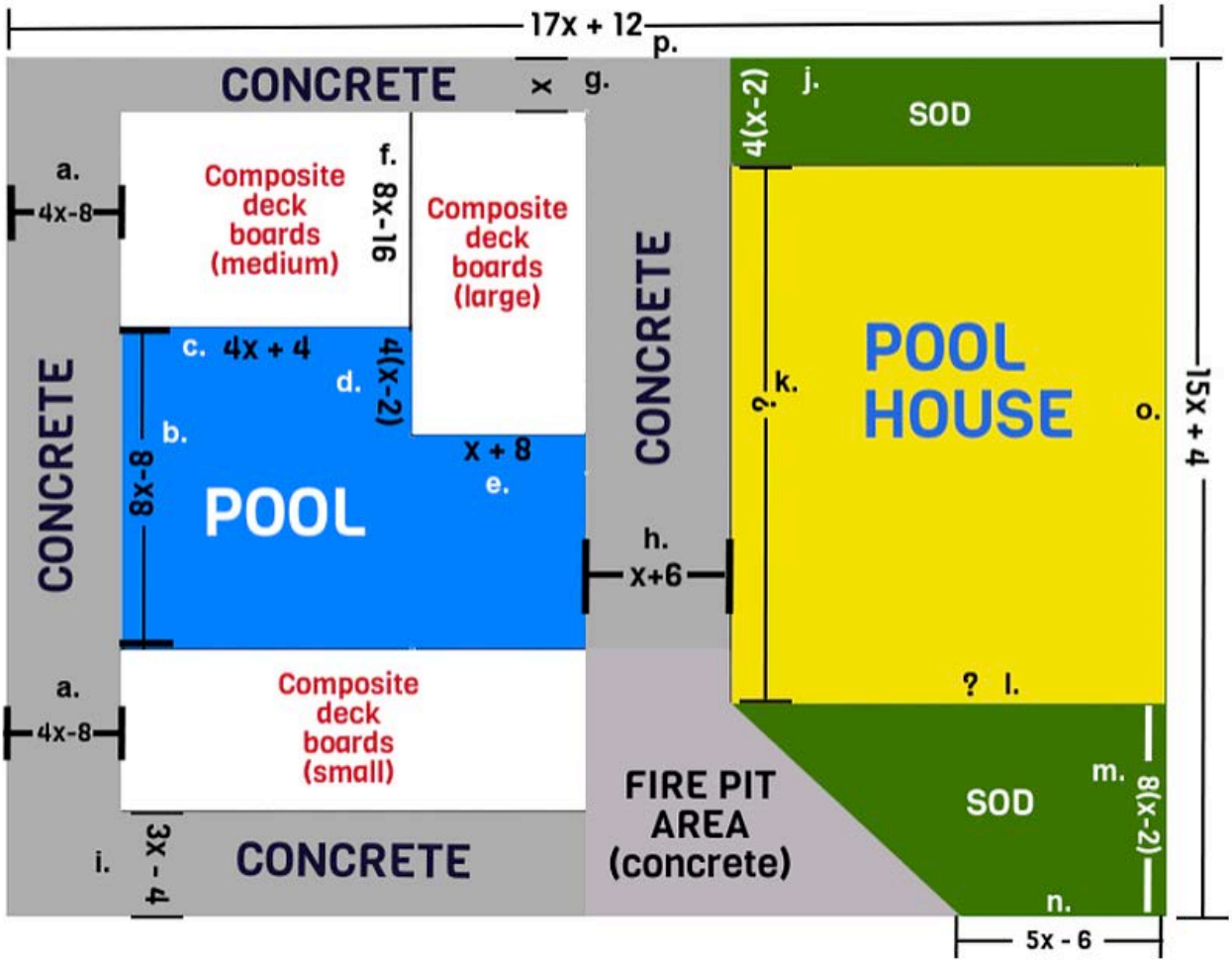
Design the Wrap-Around Porch

The Silver Design

Part One

ITD : SC 7
The Silver Design

The Silver Design



1. **By simplifying algebraic expressions, calculate the length and width (the dimensions) of the pool house.**

a.) 4x -8 by 15x + 4

b.) 3x + 28 by 7x + 2

c.) 15x + 4 by 7x + 2

d.) 5x – 6 by 4x -24

2. **By simplifying algebraic expressions, calculate the perimeter of the pool.**

a.) 26x + 8

b.) 17x -7

c.) 24x - 8

d.) 32x + 16

3. **By simplifying algebraic expressions, calculate the perimeter of the entire backyard.**

a.) 32x + 16

b.) 32x +24

c.) 64x + 32

d.) 64x + 24

4. **Analyze the Silver Design. What is the missing algebraic expression for the letter k?**

a. 11x + 2

b. 3x + 28

c. 6x - 22

d. 6x + 28

5. **Analyze the Silver Design. What is the missing algebraic expression for the letter l?**

a.) 8x - 4

b.) 10x + 12

c.) 12x - 12

d.) 7x + 2

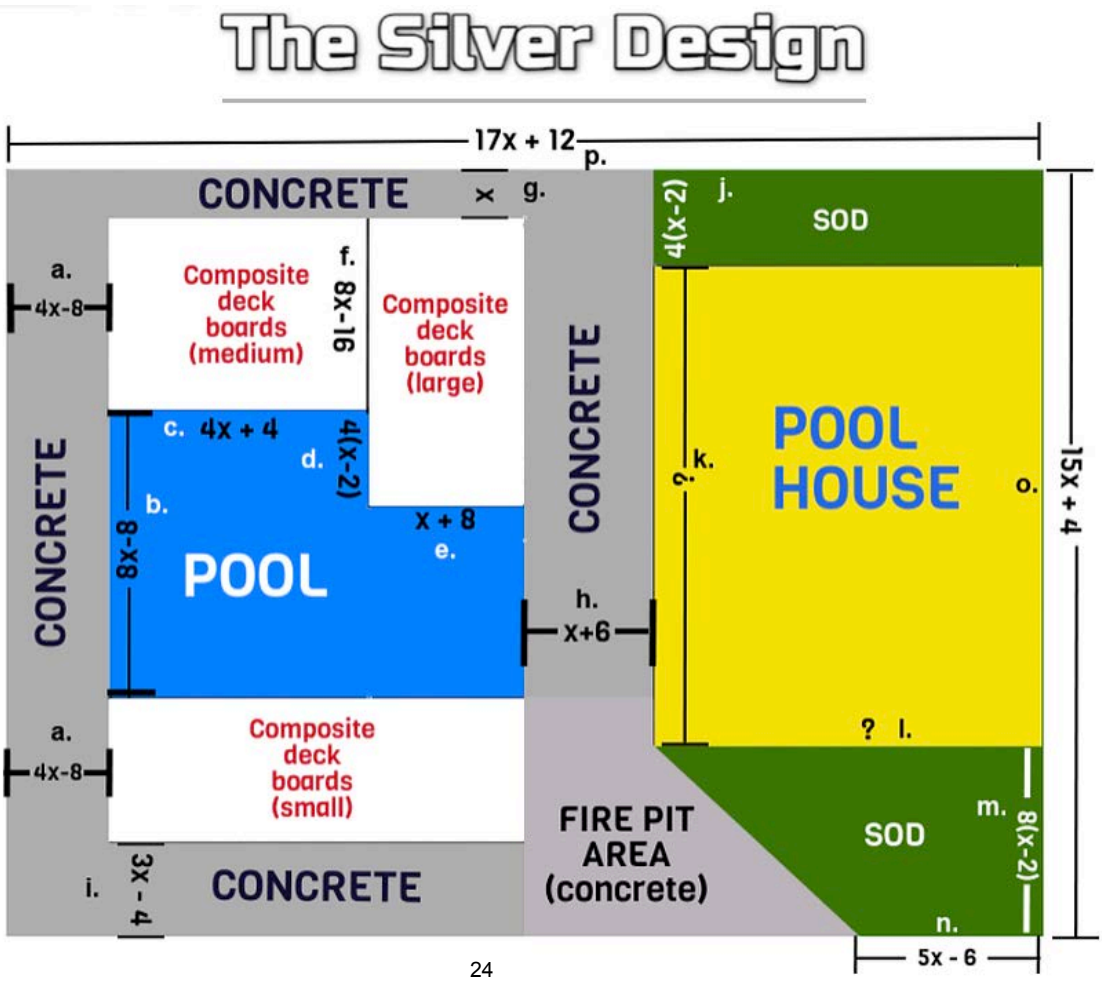
The Silver Design
Part Two

Mind Check ITD : SC 8
The Silver Design
Part Two

If **x=4 feet**, substitute to determine the actual dimensions found in the table below.

	a.	b.	c.	d.	e.	f.	g.	h.
Expression	**4x - 8**	**8x - 8**	**4x + 4**	**4 (x – 2)**	**x + 8**	**8x - 16**	**x**	**x + 6**
Feet								

	i.	**j.**	**k.**	**l.**	**m.**	**n.**	**o.**	**p.**
Expression	**3x - 4**	**4(x – 2)**			**8(x – 2)**	**5x - 6**	**15x + 4**	**17x + 12**
Feet								



1. If x=4 feet, substitute to determine the actual dimensions of the pool house?

a.) 14 feet by 12 feet

b.) 36 feet by 30 feet

c.) 40 feet by 30 feet

d.) 44 feet by 36 feet

2. If x=4 feet, substitute to determine the actual dimensions of the entire back yard?

a.) 80 feet by 64 feet

b.) 36 feet by 30 feet

c.) 40 feet by 30 feet

d.) 44 feet by 36 feet

3. Examine your completed table. Which of the following are equivalent expressions?

a.) (b,d) are equivalent and (e, j) are equivalent

b.) (a, n) are equivalent

c.) (c, j) are equivalent and (f, k) are equivalent

d.) (a,d,j) are equivalent and (f,m) are equivalent

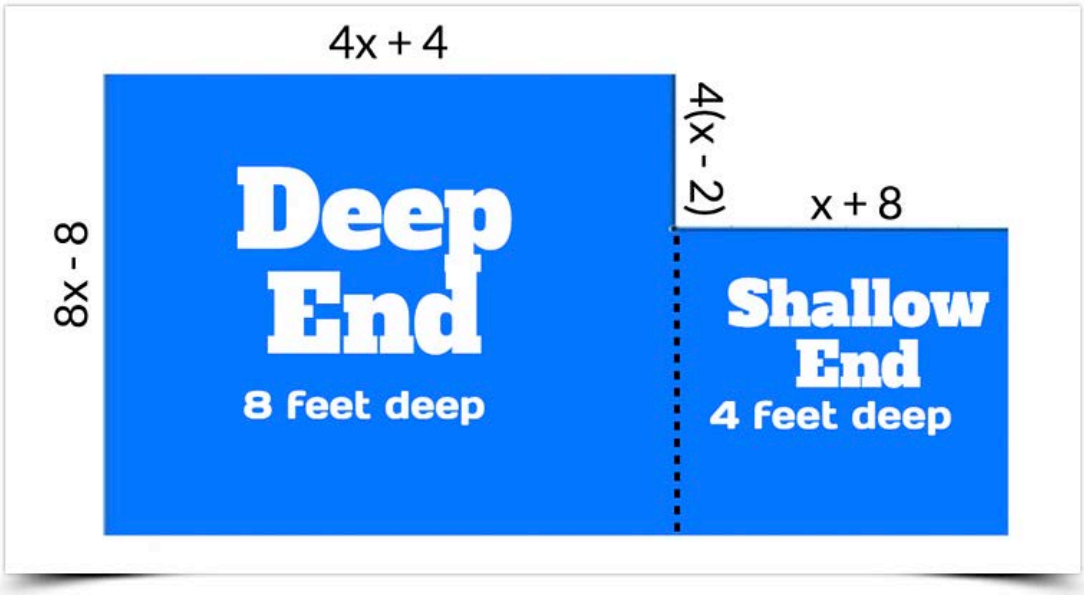
The Pool

Utilize your completed table from ITD: SC 8 and the diagram above to help you answer the questions for ITD: SC 9.

Mind Check

ITD : SC 9

The Pool



1. **What is the area of the pool in square feet (water surface)?**

a.) 480 square feet

b.) 672 square feet

c.) 768 square feet

d.) 384 square feet

2. **Using the pool diagram, what is the volume in cubic feet?**

a.) 3840 cubic feet

b.) 5664 cubic feet

c.) 4608 cubic feet

d.) 12,668 cubic feet

3. **If there are 7.5 gallons of water in each cubic foot, how many gallons of water will be needed to fill the pool?**

a.) 34,560 gallons

b.) 212,350 gallons

c.) 42,000 gallons

d.) 20,542 gallons

4. **If it costs $27.50 per 1000 gallons of water to fill the pool, how much would it cost to fill Mr. Silver's pool?**

a.) **$950.40**

b.) **$12,456.75**

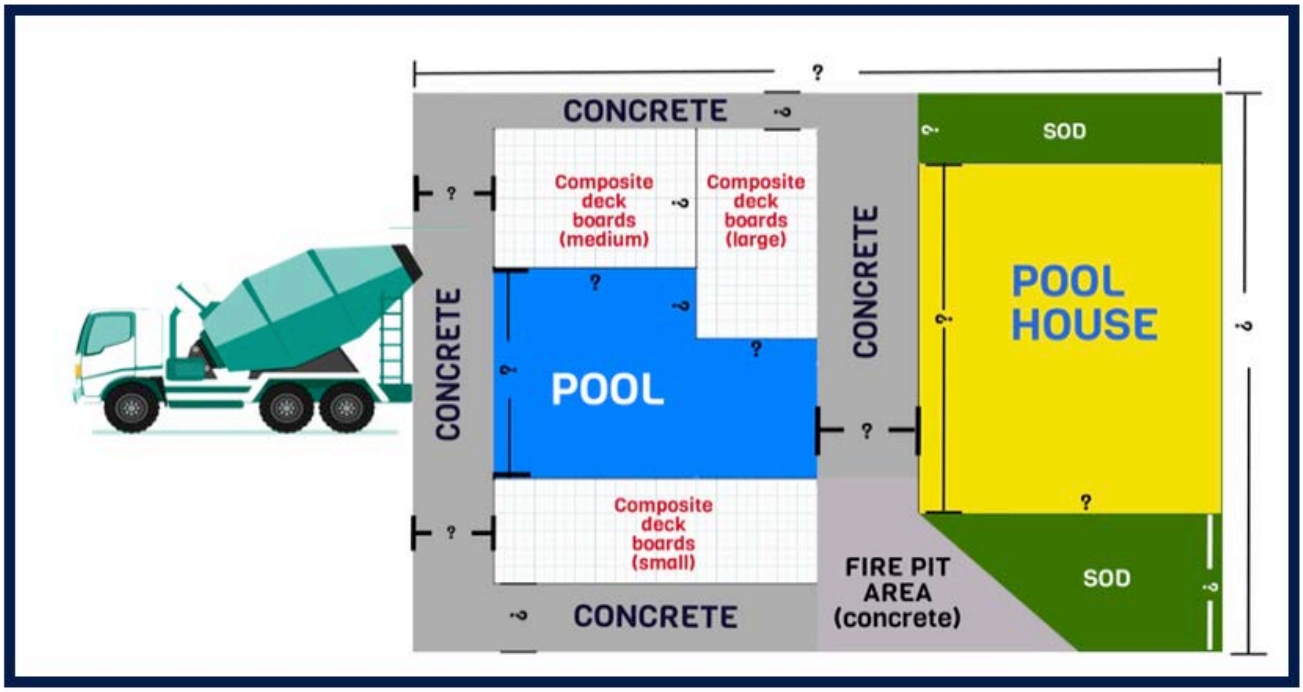
c.) **$175.00**

d.) **$750.50**

THE CONCRETE

ITD : SC 10
The Concrete

The Silver Design



1. **What is the total area for the sections of the backyard that will be covered with professional stamped concrete?**

   a. **2254 square feet**
   b. **12,262 square feet**
   c. **1854 square feet**
   d. **1664 square feet**

2. **If the professional stamped concrete costs $18 per square foot, what would be the total cost for the concrete**

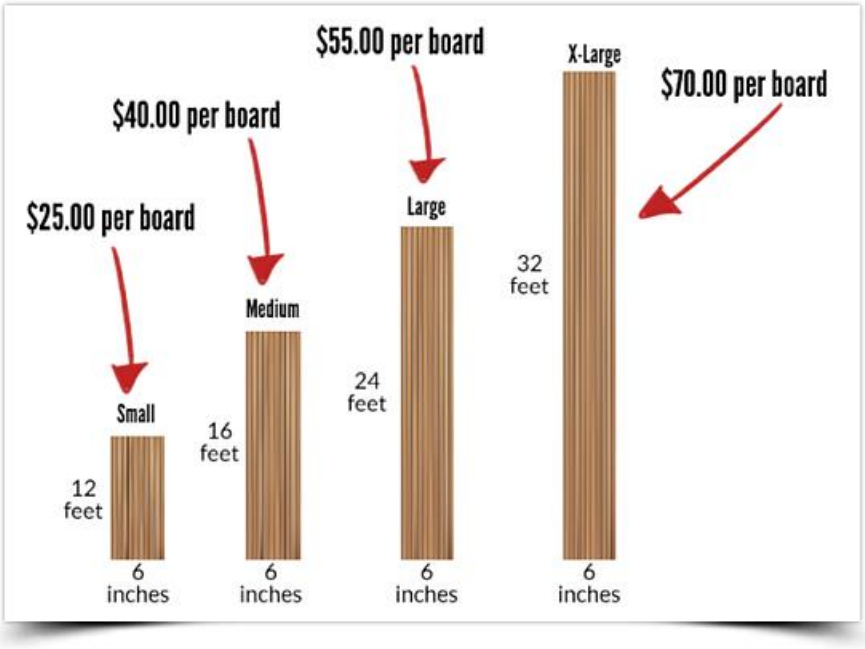
   a. **$40,572**
   b. **$29,952**
   c. **$33,372**
   d. **$34,002**

Utilize the Silver Design and the information below to help answer the questions for ITD: SC 11.

Mind Check

ITD : SC 11

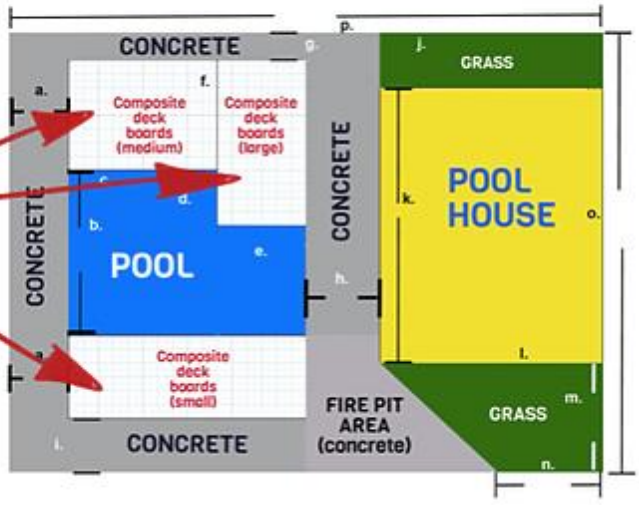
The Deck Boards



The Composite Deck Boards

Calculate the area for the designated sections of the composite deck boards (large, medium, small).

★ Use the table from ITD: SC 8 for the actual dimensions in feet.



Calculate the area for the designated sections of the composite deck boards (large, medium, small).

1. Which of the following is the area of the section where the small composite deck boards will be placed?

a.) 384 square feet

b.) 288 square feet

c.) 450 square feet

d.) 420 square feet

2. Which of the following is the area of the section where the medium composite deck boards will be placed?

a.) 288 square feet

b.) 300 square feet

c.) 320 square feet

d.) 400 square feet

3. Which of the following is the area of the section where the large composite deck boards will be placed?

a.) 320 square feet

b.) 384 square feet

c.) 288 square feet

d.) 410 square feet

continued

4. How many small composite deck boards will be needed to cover the area of the designated section?

a.) 40

b.) 32

c.) 64

d.) 70

5. How many medium composite deck boards will be needed to cover the area of the designated section?

a.) 24

b.) 40

c.) 120

d.) 20

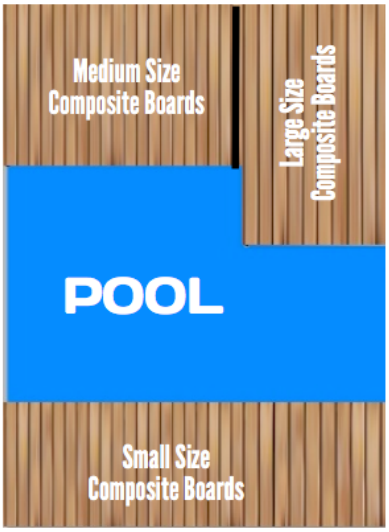
6. How many large composite deck boards will be needed to cover the area of the designated section?

a.) 24

b.) 12

c.) 32

d.) 28



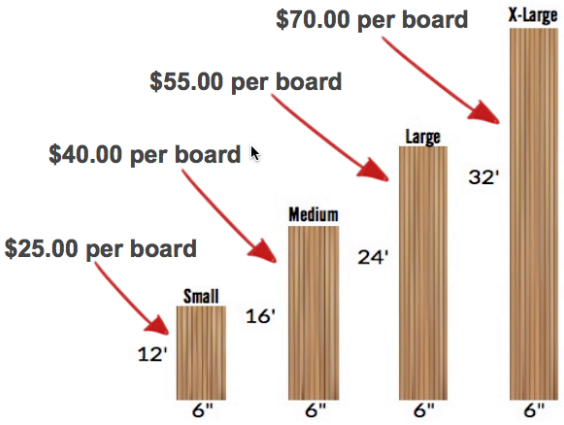
7. Calculate the total cost of all the composite deck boards. Which of the following is the calculated cost?

a.) $5000

b.) $4520

c.) $4250

d.) $4985



1. According to this selection, which statement is true?

a.) When landscaping, a homeowner should use seeds as a cheap option for the prevention of flooding.

b.) Sod can be used to establish a lawn quickly although it can decrease the value of a home.

c.) Sod can improve air and water quality in the immediate area.

d.) Sod is developed at the United States Department of Agriculture and then transported to the consumer.

2. According to the selection, how is sod harvested and sold?

a.) Sod is harvested and sold as a square slab.

b.) Sod is harvested and sold as a rolled rectangle.

c.) Sod is harvested and sold in four-foot-wide rolls for major repair projects typically used in the bigger, commercial installations.

d.) All of the above.

Utilize your completed table from ITD: SC 7 and the Silver Design to answer the following questions.

1. Calculate the area for the designated sections that will be covered with the professional installed sod. Which of the following represents the calculated area?

a.) 664 square feet

b.) 568 square feet

c.) 592 square feet

d.) 622 square feet

2. If the professional installed sod costs $0.60 per square foot, what is the total cost for the sod?

a. $355.20

b. $340.80

c. $355.20

d. $373.20

continued

Complete the following table. Utilize your table to answer the following questions.

Sod Pieces (x)	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Cost (y)															

The sod used for Mr. Silver's Design was harvested in pieces measuring 5 square feet and costs $0.60 per square foot.

3. **Calculate the unit rate for the cost of a single piece of sod. Which of the following represents the unit rate?**

a. **$2.75 per piece**
b. **$3.00 per piece**
c. **$3.50 per piece**
d. **$5.00 per piece**

4. **The table portrays a relationship between the cost and the number of pieces of sod. Which of the following is the independent and dependent variable?**

a.) Independent Variable= cost
Dependent Variable= sod pieces

b.) Independent Variable= sod pieces
Dependent Variable= cost

5. **Which of the following equations can be used to determine the cost (y) according to the sod pieces purchased?**

a.) y= 2.75x

b.) y= 3x

c.) y= 3.50x

d.) y= 5x

6. **Which of the following represents the constant of proportionality for the relationship between the cost and the number of pieces of sod?**

a.) 5

b.) 2

c.) 10

d.) 3

Mind Check ITD:SC 13 Working With Sod

continued

7. **How many sod pieces would need to be purchased to cover the grass areas in Mr. Silver's newly designed backyard? According to the number of sod pieces needed, what would be the total cost for the sod?**

a.) Number of Sod Pieces= 118
Cost= $354

b.) Number of Sod Pieces= 119
Cost= $357

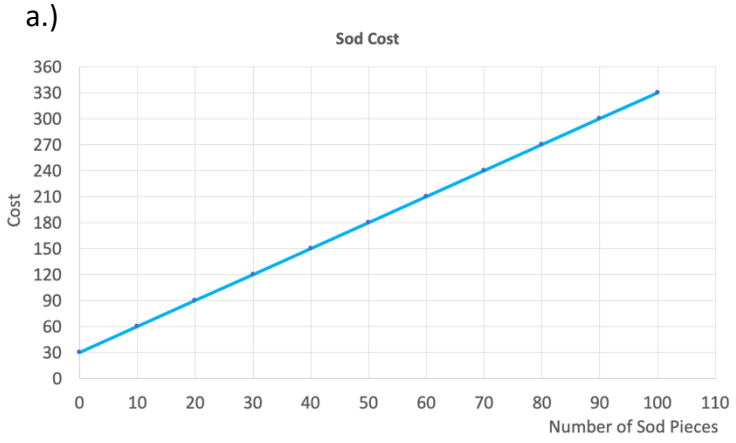
c.) Number of Sod Pieces= 24
Cost= $72

d.) Number of Sod Pieces= 200
Cost= $600

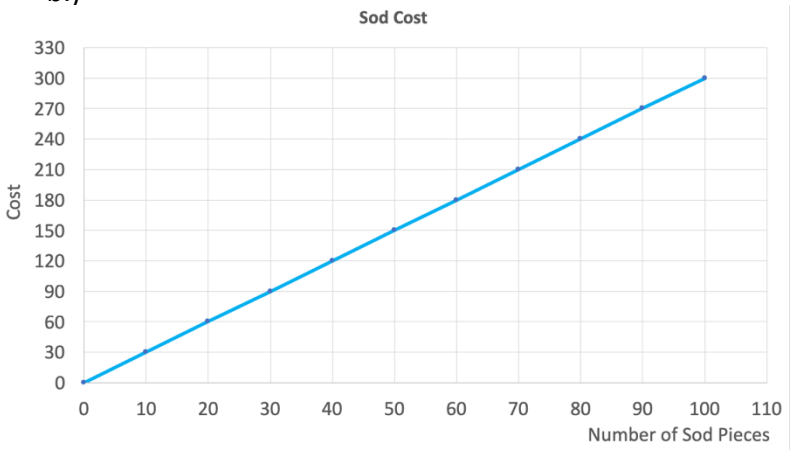
8. **Which of the following graphs accurately portrays the relationship between the cost and the number of pieces of sod?**

See Graphs Below

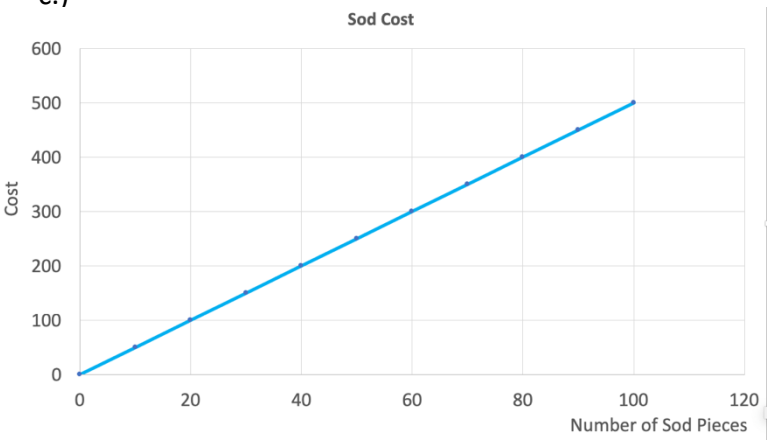
a.)



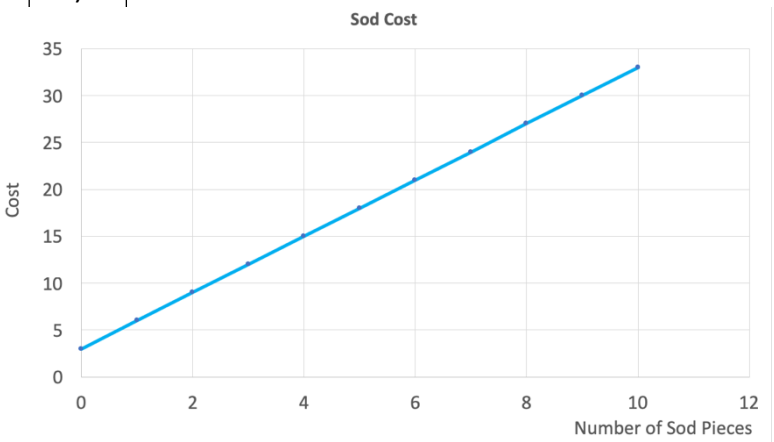
b.)

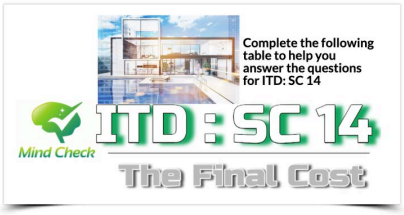


c.)



d.)





Complete the following table. Utilize your table to answer the following question.

Item	Unit Cost	Quantity	Cost
Tyson Enhanced Saddle Grooved Composite Deck Boards (24')	**$55.00 (per board)**		
Tyson Enhanced Saddle Grooved Composite Deck Boards (16')	**$40.00 (per board)**		
Tyson Enhanced Saddle Grooved Composite Deck Boards (12')	**$25.00 (per board)**		
Professional Stamped Poured Concrete	**$18.00 (per square foot)**		
Professional Installed Sod Grass	**$0.60 (per square foot)**		
Water for pool fill	**$27.50 (per 1000 gallons)**		
	-	-	-
TOTAL	-	-	

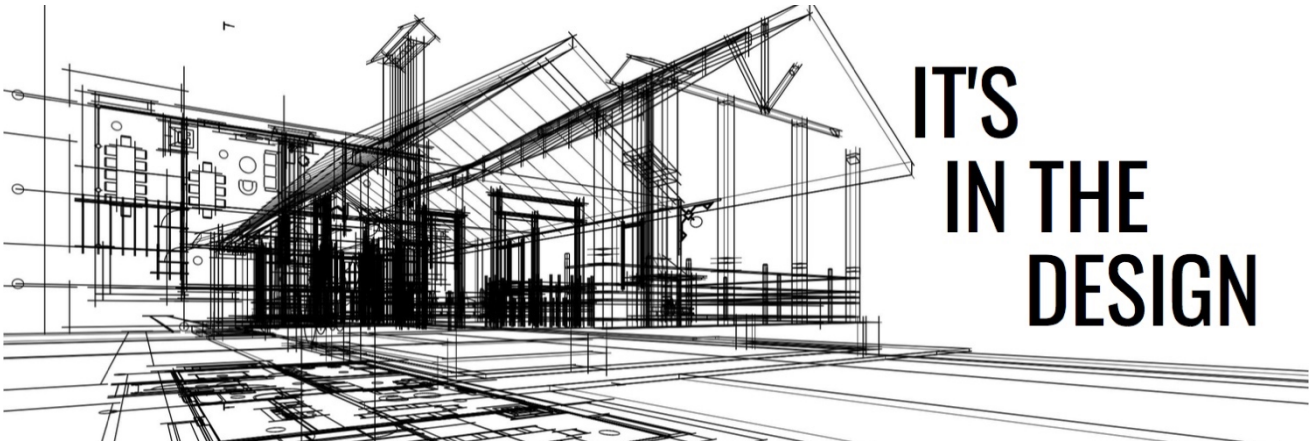
1. Utilizing your completed table, approximately what was the final cost for Mr. Silver's backyard?

a.) approximately $25,000

b.) approximately $20,000

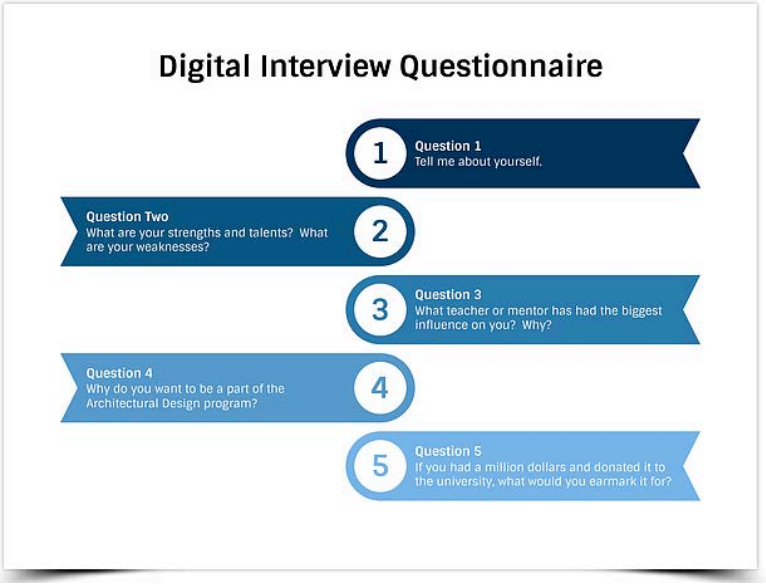
c.) approximately $35,000

d.) approximately $45,000



PART THREE

Final Steps to Becoming an Architect



Digital Interview Questions

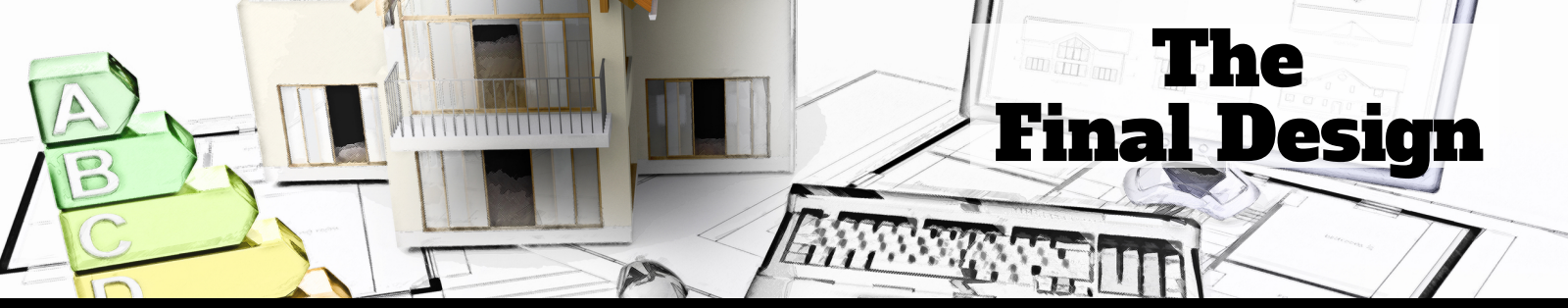
1. Tell me about yourself.

2. What are your strengths and talents? What are your weaknesses?

3. What teachers or mentor has had the biggest influence on you and why?

4. Why do you want to be a part of the Architectural Design program?

5. If you had a million dollars and donated it to the university, what would you earmark it for?



Designing a Home for a Family of Four

After acceptance to Rice University, you went on to earn a 4.0-grade point average and were the number one ranked student in the Architectural Design program. The final step to meet all of your graduation requirements is to complete the culminating architectural design project.

Family Dynamics

- Mom and dad are in their late 30's
- Daughter age of 5 and son age of 12
- Family enjoys spending time together watching movies, playing video games, and other types of games
- Father and son enjoy the game of basketball
- Family enjoys outdoor activities

Home Requisites

- Home must be one-story
- Area of the home (inside) must be between 1750-2000 square feet
- The home must have a kitchen
- The home must have at least one bathroom
- The yard area can be any size you deem fit
- Use standard conventional dimensions for all doorways, hallways, etc.

Design Requisites

- The design must be constructed to scale. Include a key that identifies the scale factor
- Three diagrams are required. The original sketch, a design with the dimensions expressed as algebraic expressions, and a design with the actual dimensions expressed in feet
- The final design must be computer generated in some capacity

Additional requisites can be found on the following page.

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ITD : SC 16

Mind Check

EXTEND YOUR THINKING

The Final Design Requisites

Diagram 1:

- Original sketch will be completed on grid paper (0.5 cm grid paper recommended).
- Each unit on the grid paper will be equivalent to a certain amount of
  Example: 0.5 cm=2 feet.
- Label all dimensions on the sketch.
- Label all elements on the sketch. The more you specify elements of the home the easier the computer generated diagrams will be to construct.

Diagram 2:

- Utilizing the sketch, create a digital diagram (blueprint). Explore different web-based applications to assist with the design process. Refer to the Mr. Silver's backyard design for an example and guidance.

All dimensions on Diagram 2 should be expressed in algebraic expressions.

- Your design must include at least three equivalent algebraic expressions. For example, if you have multiple dimensions that are the same, one dimension could be expressed as $4x - 8$ and the other could be $4(x - 2)$.
- Your design must include at least three dimensions written as algebraic expressions with exponents.
- Your design must include a separate page or table that shows all of the dimensions written as algebraic expressions translated into algebraic language.
  Example: $3x - 4$ = Four less than three times a number.
- Your design must include a key that will show the value of x that will be used for substitution to calculate actual dimensions.

Diagram 3:

- Dimensions will be expressed in feet.
- Specific elements and details must be included. Refer to the Mr. Silver's backyard design for an example and guidance. Some web-based design applications will have specific objects that can be inserted into your design.

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Designing a Home for a Family of Four

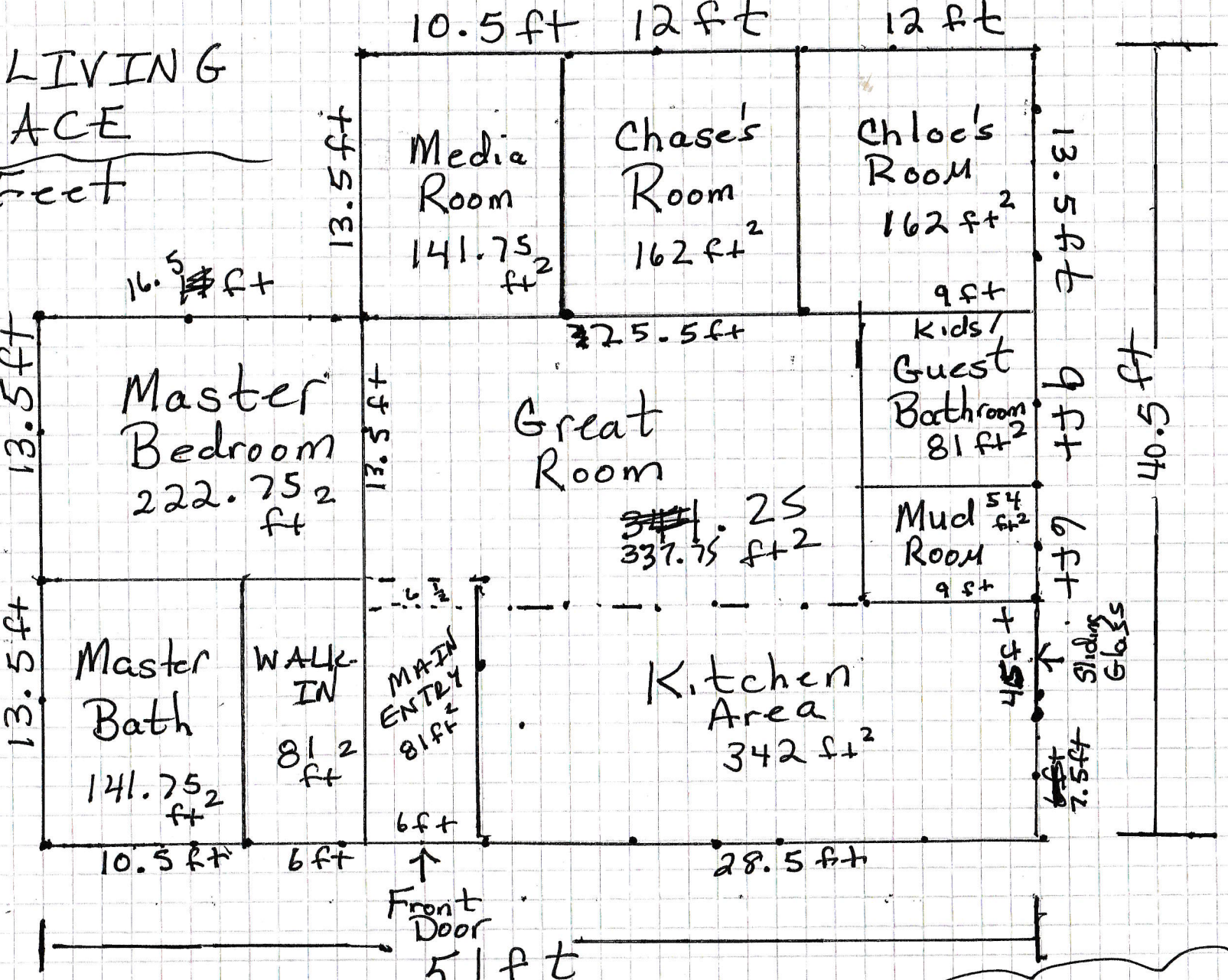
Target

4: Exceeds	3: Meets	2: Approaching	1: Beginning
Family Dynamics			
• The designer pays close attention to the family dynamics in the layout of the home.	• The designer pays some attention to the family dynamics in the layout of the home.	• The designer pays little attention to the family dynamics in the layout of the home.	• The designer pays no attention to the family dynamics in the layout of the home.
Home Requisites			
• The design is flawless and has an innovative application of all the home requisites.	• The design is sufficient and has an effective application of all the home requisites.	• The design is simplistic and has a workable application of all the home requisites.	• The design is undeveloped and has an ineffective application of all the home requisites.
Math Calculations			
• All math computations are correct. Shows a clear understanding of working with algebraic expressions, equations and working with scale.	• One or two errors in math computations; Shows a good understanding of working with algebraic expressions, equations and working with scale.	• Several errors in math computations; Shows some understanding of working with algebraic expressions, equations and working with scale.	• Many errors in computation; Does not show an understanding of working with algebraic expressions, equations and working with scale.
Accuracy			
• Successfully measured and drawn proportionally to the selected unit of measure all of the time. • Entire design is crafted with an unmatched attention to detail and precision.	• Measured and drawn proportionally to the nearest selected unit of measure on a consistent basis. • Design is well done and detailed. Minor errors in appearance do not detract from overall quality.	• Measured and drawn to the nearest selected unit of measure; some measurements are not proportionally accurate. • Design looks accurate; however, errors in appearance and /or construction detract from overall quality.	• Did not measure and draw scale drawing to the nearest selected unit of measure; many measurements not proportionally accurate. • Design looks somewhat thrown together or finished quickly; many errors in appearance and /or construction detract from overall quality.
The Final Design			
• Creative, neat, and exceptionally planned design with all of the required information. Significant effort is evident and the final design exceeds the expectations of the customer.	• Well planned design with all of the required information. Effort is evident and the final design meets the expectations of the customer.	• Overall design could be improved. Effort is somewhat evident and most of the required information meets the expectations of the customer.	• Overall design could be improved. Effort is lacking and the required information does not meet the expectations of the customer.

Think Matics

MAIN LIVING SPACE
Feet

DIAGRAM 1

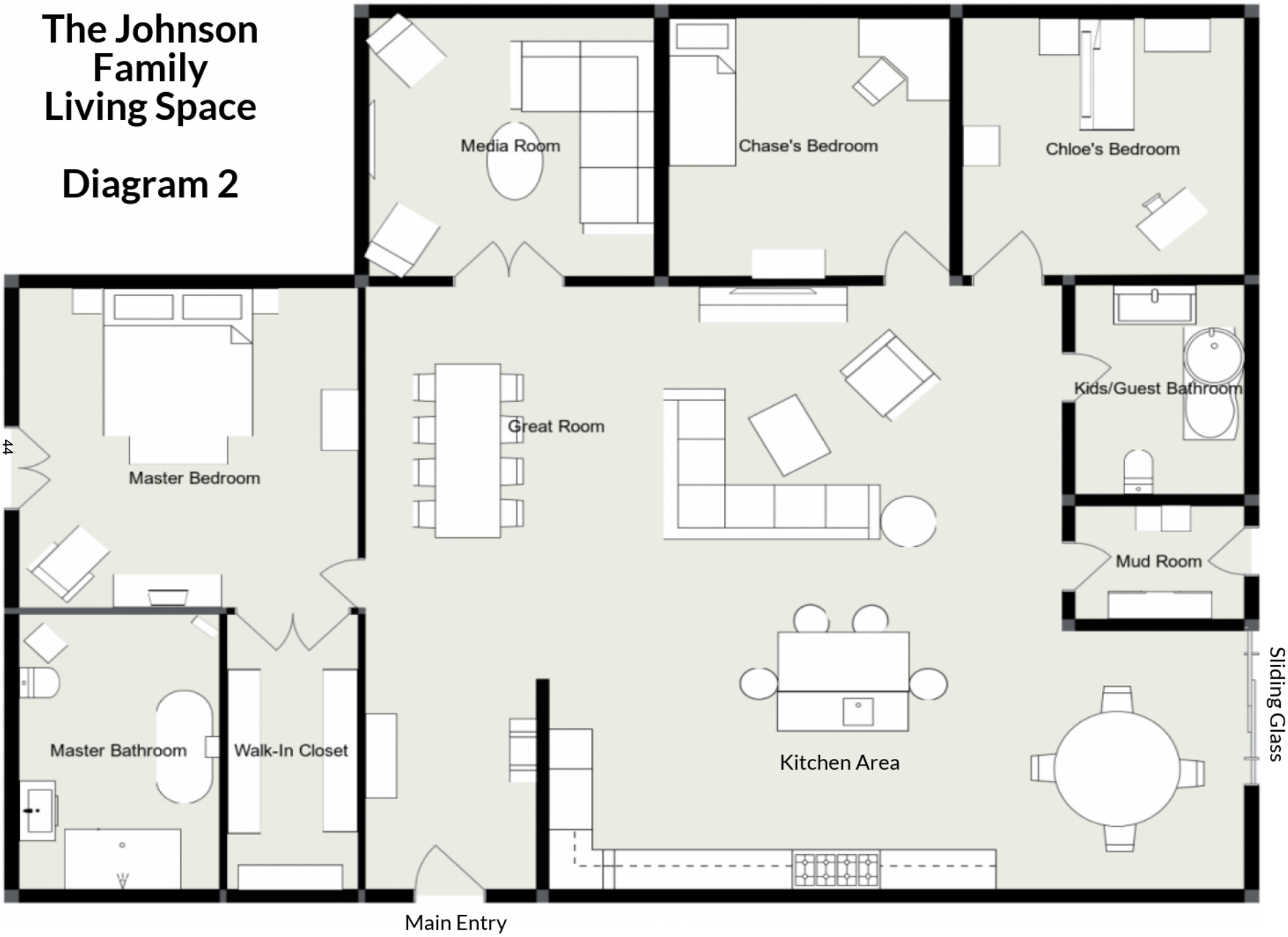


Total Area =
1842.75 ft²

Scale =
1 Block = 1.5 ft

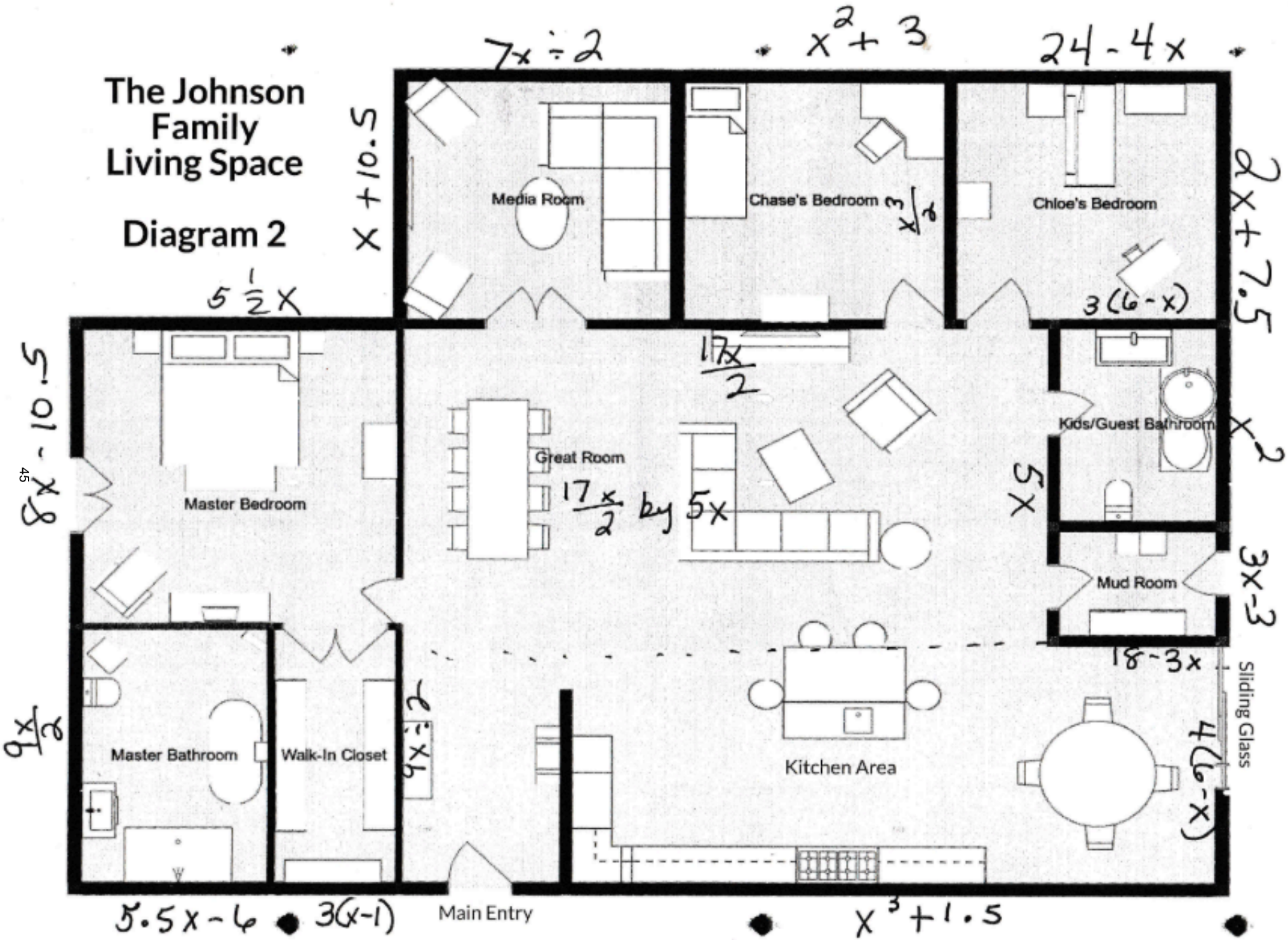
The Johnson Family Living Space

Diagram 2



The Johnson Family Living Space

Diagram 2



Room	Dimensions (Actual in Feet)			Dimensions (Algebraic Expressions)			Algebraic Language		
Great Room	25.5	BY	15	$\frac{17x}{2}$	BY	5x	Half of a number times seventeen	BY	Five times a number
Kitchen Area	28.5	BY	12	$x^3 + 1.5$	BY	4(6 – x)	One and a half more than the cube of a number	BY	The product of a number less than 6 and four
Chloe's Bedroom	12	BY	13.5	24 – 4x	BY	2x + 7.5	The difference between twenty-four and four times a number	BY	Seven and a half more than two times a number
Chase's Bedroom	12	BY	13.5	$x^2 + 3$	BY	$\frac{x^3}{2}$	Three more than the square of a number	BY	One-half of the cube of x
Media Room	10.5	BY	13.5	$7x \div 2$	BY	X + 10.5	The quotient of seven times a number and two	BY	Ten and a half more than a number
Master Bedroom	16.5	BY	13.5	$5\frac{1}{2}x$	BY	8x – 10.5	The product of five and a half and a number	BY	Ten and a half less than eight times a number
Master Bathroom	10.5	BY	13.5	5.5x - 6	BY	$\frac{9x}{2}$	Six less than five and a half times a number	BY	Half of nine times a number
Walk-In Closet	6	BY	13.5	3(x – 1)	BY	$9x \div 2$	The product of one less than a number and three	BY	The quotient of nine times a number and two
Kid's/Guest Bathroom	9	BY	9	3(6 – x)	BY	x^2	The product of a number less than 6 and three	BY	The square of a number
Mud Room	9	BY	6	18 – 3x	BY	3x - 3	Three times a number less than eighteen	BY	Three less than three times a number


Basketball Court
Welcome Home Johnson Family!
Swimming Pool
14'
22.5'
25.5'
Outdoor Patio
10.5'
12'
12'
9'
Media Room
13.5'
Chase's Bedroom
Chloe's Bedroom
13.5'
9'
16.5'
9'
18'
Master Bedroom
13.5'
Great Room
Kid's/Guest Bathroom
9'
Wrap-Around Porch
27'
Mud Room
6'
9'
Master Bathroom
Walk-In
13.5'
Kitchen Area
12'
18'
10.5'
6'
6'
28.5'
51'
9'
9'