Learning Works Charter School

Integrated Math 2A
Module 1

Student Name: _____ Teacher Name: _____

As you work through the chapters in your Integrated Math 2 course, you will be encouraged to think and to make conjectures while you persevere through challenging problems and exercises. You will make errors – and that's okay! Learning and understanding occur when you make errors and push through mental roadblocks to comprehend and solve new and challenging problems.

Text: *Integrated Math 2,* Big Ideas, 2016

To ensure you are learning, you must show your work for all exercises.
YOU WILL <u>NOT EARN CREDIT</u> FOR ANSWERS <u>WITHOUT WORK</u>.

Chapter 1: Functions and Exponents (1.1-1.6)

_____ Maintaining Mathematical Proficiency (page 1): Complete exercises #1-8 **all**

_____ 1.1 Absolute Value Functions: Read the lesson and complete exercises
#1, 2, 5, 7, 9, 13, 15, 17, 18, 27, 29, 33, 34, 45, 46

_____ 1.2 Piecewise Functions: Read the lesson and complete exercises
#3, 5, 7, 8, 11, 13, 15, 17, 18, 21, 31, 37, 39, 56, 58

_____ 1.3 Inverse of a Function: Read the lesson and complete exercises
#1, 3, 4, 5, 6, 9, 13, 15, 17, 23, 32-27 **all**

_____ 1.4 Properties of Exponents: Read the lesson and complete exercises
#5-9 **all**, 11, 12, 13, 15, 17, 19, 21, 23-28 **all**, 31, 32, 35, 36, 47, 70, 71

_____ 1.5 Radicals and Rational Exponents: Read the lesson and complete exercises
#1, 3-7 **all**, 9-13 **all**, 15, 17, 19, 20, 23, 27, 29, 30, 57

_____ 1.6 Exponential Functions: Read the lesson and complete exercises
#1, 3, 5, 7, 9, 11, 12, 18, 21, 23, 75, 76, 77, 78

Students must complete the Chapter Review and Project with a teacher or tutor at school.

_____ Chapter Review (pages 52-54): Complete exercises #1-7 **all**, 9-33 **all**

_____ Complete the attached Project **(No project = No credit)**

A teacher or tutor reviewed the Chapter Review and Project with the student.

Date: _____ Signature: _____

Grade

Pool Shots

How can mathematics help you become a better pool player? What type of function could you use to sink a pool ball? What aspects of the function will help the shot be successful?

1. There are a variety of ways to play pool. Most of the goals include hitting the cue ball (white ball) with a cue stick so it hits another ball which follows a path into a pocket. A coordinate plane is drawn over the pool table below. Graph each function in the coordinate plane and determine whether you believe the shot will go into the pocket. Explain.
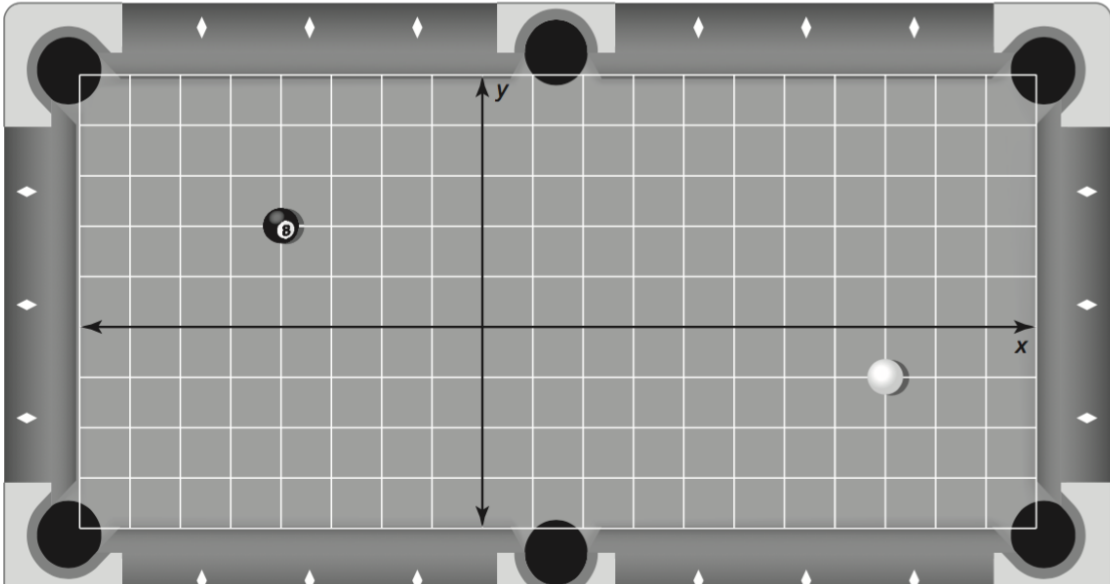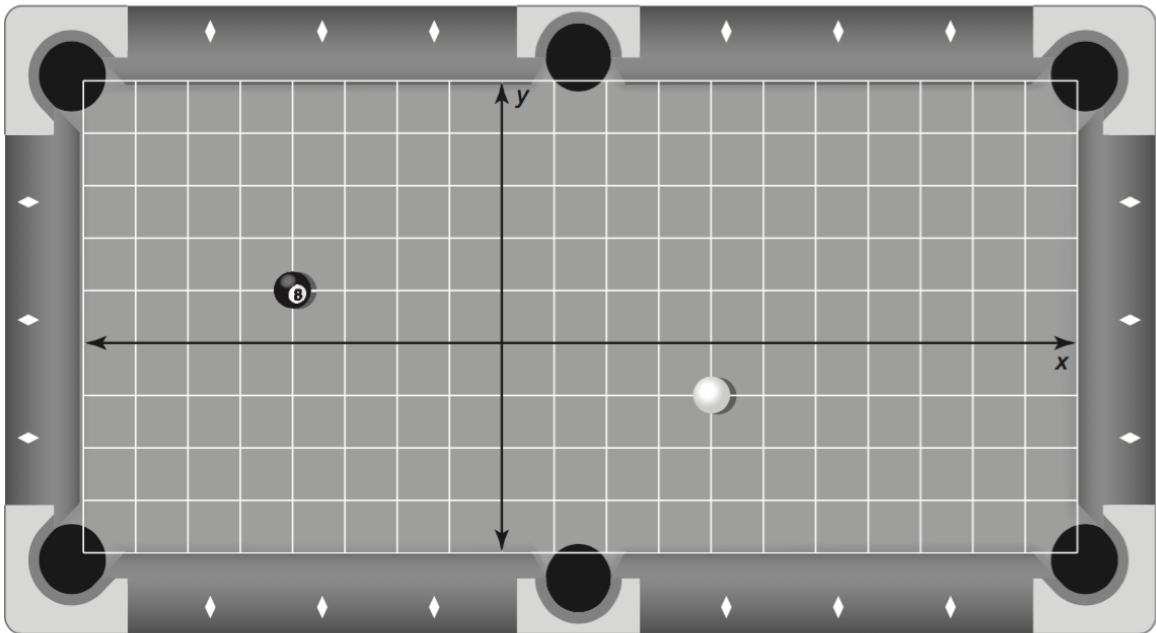
a. f(x) = x − 6
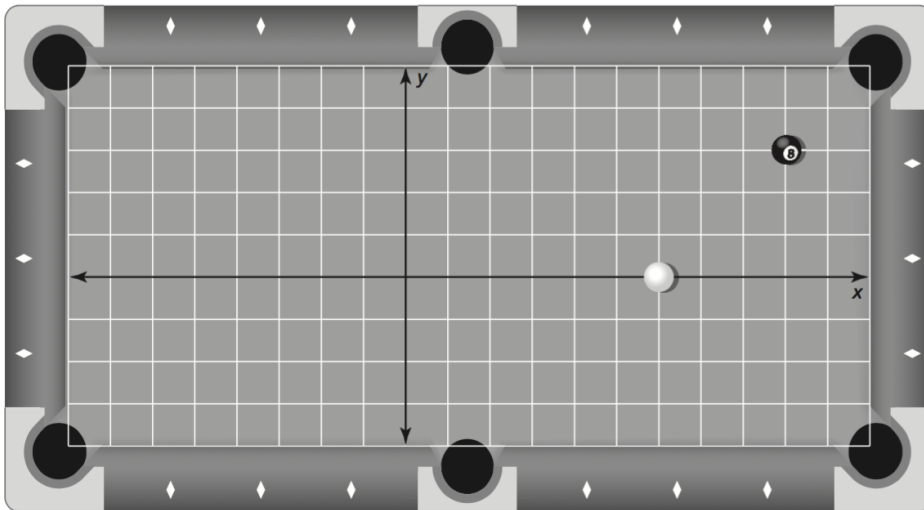
b. $f(x) = -\frac{1}{3}x + 2$
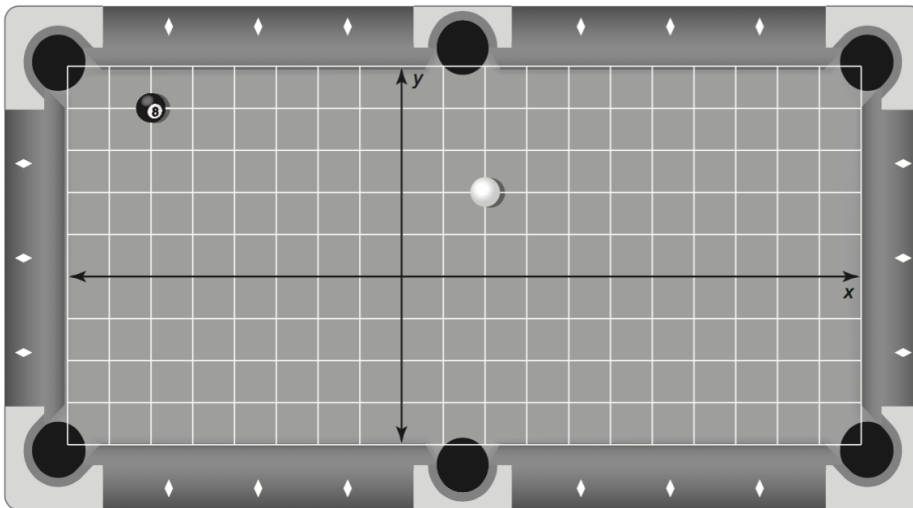
2. When playing pool it is often helpful to bank a shot. One method of banking a shot involves calculating the angle so that the shot can hit the rail and reflect off at the same angle into a pocket. Graph each equation in the coordinate plane. Does the equation represent the path of a bank shot into a pocket? Explain.

a. $f(x) = |0.75x - 3| - 4$

b. $f(x) = -|1.25x + 1| + 5$

3. Given the coordinate plane and pool table below, write an equation whose graph would trace the path for a shot that would put the ball in a pocket. Graph the equation. In which pocket would the ball go?