Today's Materials

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___

Absolute Value Functions (Part 1)

Lesson 13

How many snap cubes?

[Click here]

Type a numeric guess!

How many snap cubes?

[Responses]

Absolute Value Functions (Part 1)

Lesson 13

Let's make some guesses and see how good they are!

Today's Goals:

❏ Given a set of numerical guesses and a target number, I can calculate absolute errors and create a scatter plot of the data.

❏ I can analyze and describe features of a scatter plot that shows absolute error data.

❏ I can describe the general relationship between guesses and absolute errors using words or equations.

GOAL

DATA → Here are 20 guesses from another class period!

On your handout, fill in the information.

guess	absolute guessing error
27	
44	
46	
59	
53	
36	
35	
65	
50	
62	
58	
28	
38	
30	
55	
37	
57	
41	
40	
60	

How Good Were the Guesses?
Pg .

13.1: 5 minutes

Actual number of snap cubes: 47

13.1: How Good Were the Guesses?

Before this lesson, you were asked to guess the number of objects in the jar. The guesses of all students have been collected. Your teacher will share the data and reveal the actual number of objects in the jar.

Use that number to calculate the **absolute guessing error** of each guess, or how far the guess is from the actual number. Suppose the actual number of objects is 100.

- If your guess is 75, then the absolute guessing error is 25.
- If your guess is 110, then the absolute guessing error is 10.

Record the absolute guessing error of at least 12 guesses in Table A of the handout from your teacher (or elsewhere as directed).

Actual number of snap cubes: 47

How'd it go?

Actual number of snap cubes: 47

guess	absolute guessing error
27	20
44	3
46	1
59	12
53	6
36	11
35	12
65	18
50	3
62	15
58	11
28	19
38	9
30	17
55	8
37	10
57	10
41	6
40	7
60	13

Plotting the Guesses
# Pg .

13.2: 15 minutes

13.2: Plotting the Guesses

Refer to the table you completed in the warm-up, which shows your class' guesses and absolute guessing errors.
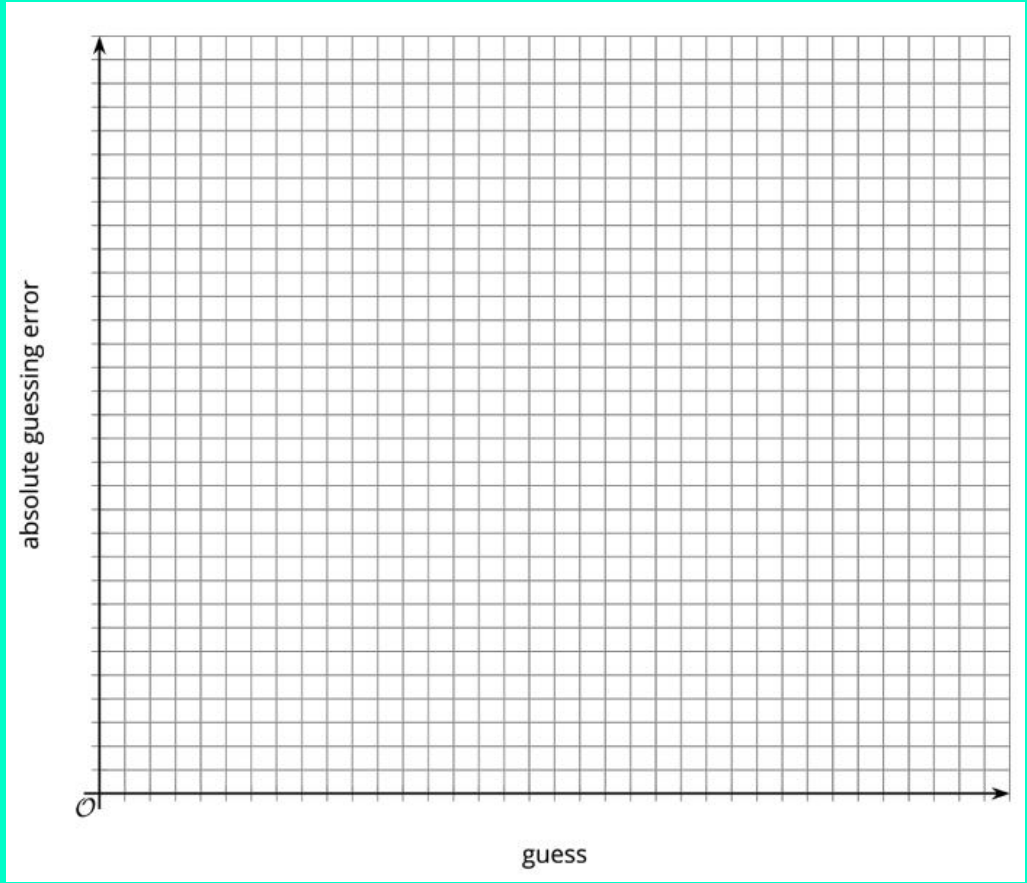
1. Plot at least 12 pairs of values from your table on the coordinate plane on the handout (or elsewhere as directed by your teacher).
2. Write down 1–2 other observations about the completed scatter plot.
3. Is the absolute guessing error a function of the guess? Explain how you know.
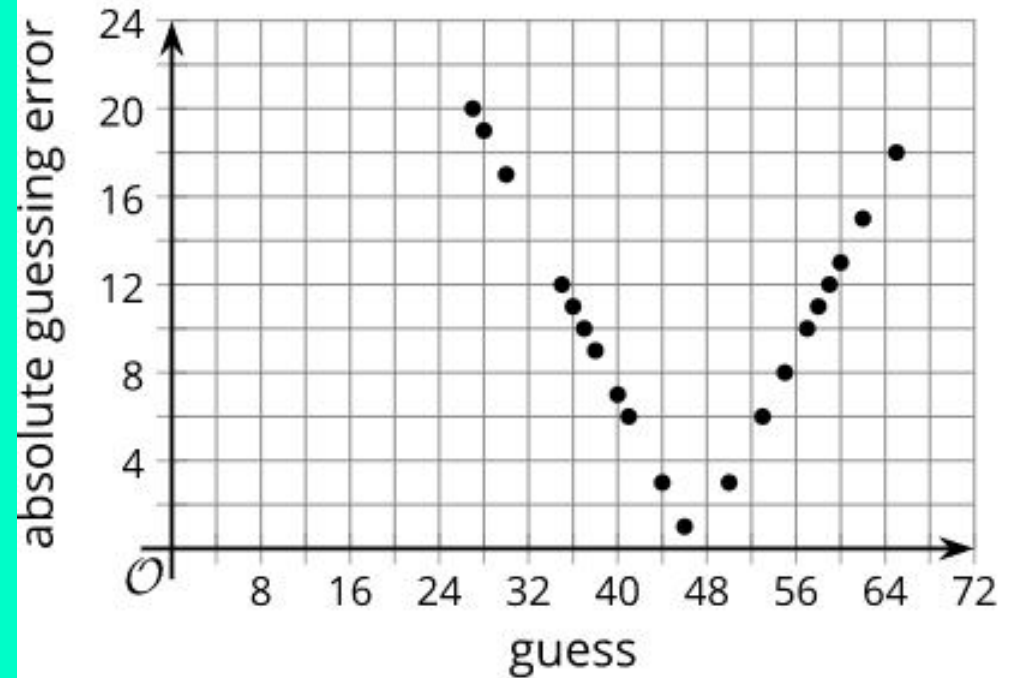
How'd it go?

absolute guessing error
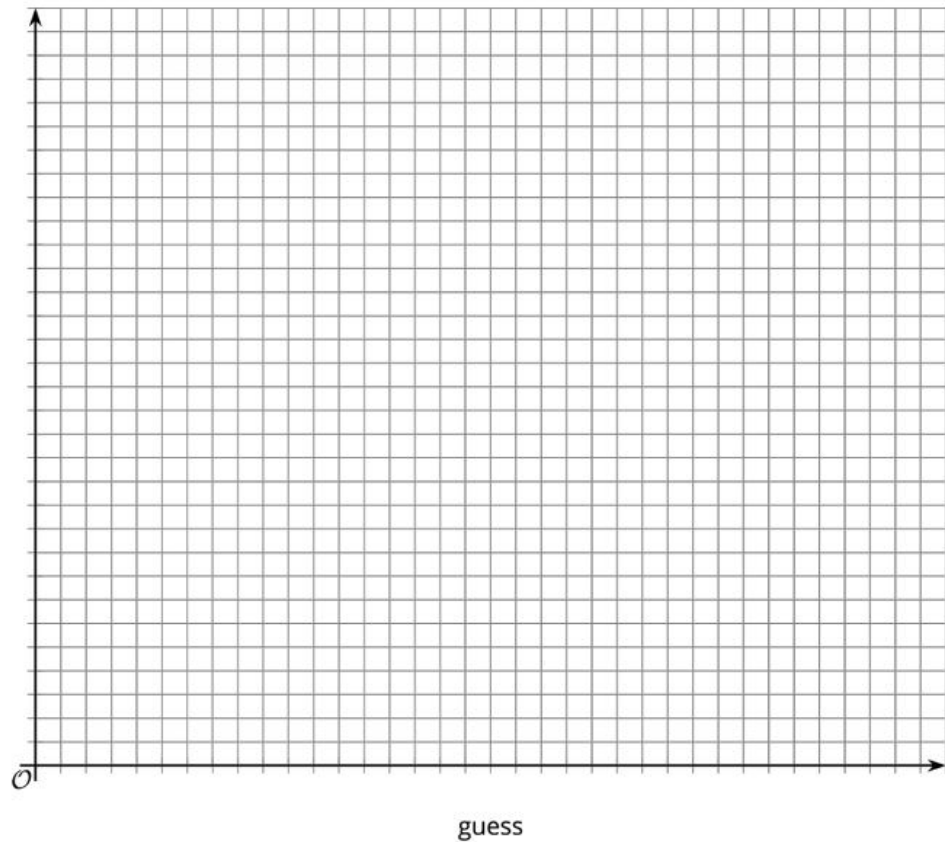
guess

Give it a try...

absolute guessing error

guess

Synthesis

A GRAPH OF THE ABSOLUTE GUESSING ERROR...
WHAT DO YOU NOTICE?

Oops, Try Again!
Pg .

13.3: 15 minutes

Actual number of snap cubes:

50

13.3: Oops, Try Again!

Earlier, you guessed the number of objects in a container and then your teacher told you the actual number.

Suppose your teacher made a mistake about the number of objects in the jar and would like to correct it. The actual number of objects in the jar is _____.

1. Find the new absolute guessing errors based on this new information. Record the errors in Table B of the handout (or elsewhere as directed by your teacher).
2. Make 1–2 observations about the new set of absolute guessing errors.
3. a. Predict how the scatter plot would change given the new actual number of objects. (Would it have the same shape as in the first scatter plot? If so, what would be different about it? If not, what would it look like?)
   b. Use technology to plot the points and test your prediction.
4. Can you write a rule for finding the output (absolute guessing error) given the input (a guess)?

Actual number of snap cubes: 50

How'd it go?

Actual number of snap cubes: 50

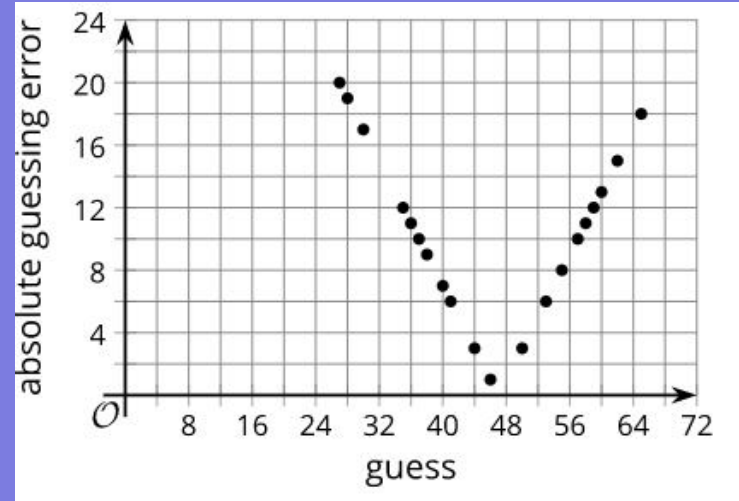| guess	absolute guessing error
27	23
44	6
46	4
59	9
53	3
36	14
35	15
65	15
50	0
62	12
58	8
28	22
38	12
30	20
55	5
37	13
57	7
41	9
40	10
60	10

Lesson synthesis

each activity focused on the idea of distance from a certain value....

How'd it go?

❑ Given a set of numerical guesses and a target number, I can calculate absolute errors and create a scatter plot of the data.

❑ I can analyze and describe features of a scatter plot that shows absolute error data.

❑ I can describe the general relationship between guesses and absolute errors using words or equations.

GOAL

Almond Bags

13.4: 5 minutes