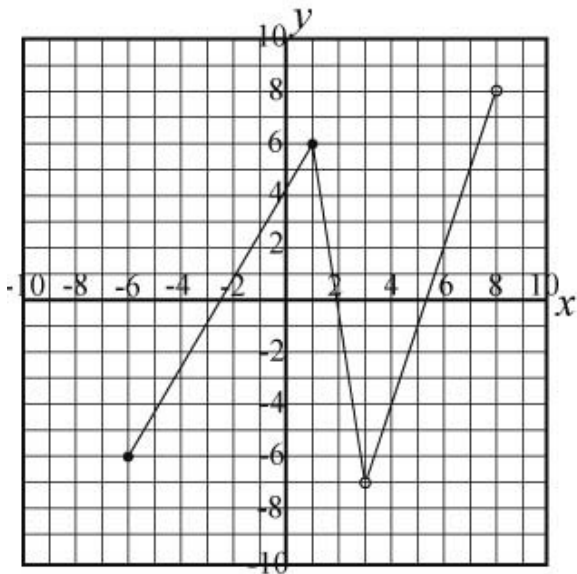


Mathematics Algebra II Unit 01: Introductions to Functions 2013-2014

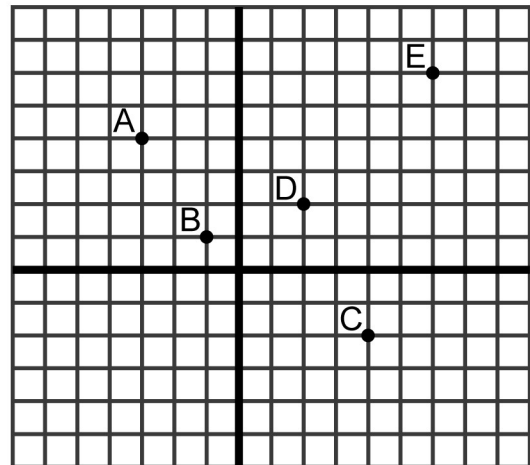
- 1 A store specializing in the sale of heavy winter clothing tracked its sales for one year. What amount of sales can be predicted for April?

Clothing Sales	
Month	SALES (in Thousands)
Jan.	\$38
Mar.	\$22
May	\$13
July	\$8.5
Sept.	\$15
Nov	\$29

- A \$18,000
 B \$16,000
 C \$23,000
 D \$21,000
- 2 What is the domain and range of relation shown in the graph?



- 3 Give the domain and range of the relation shown in the graph.

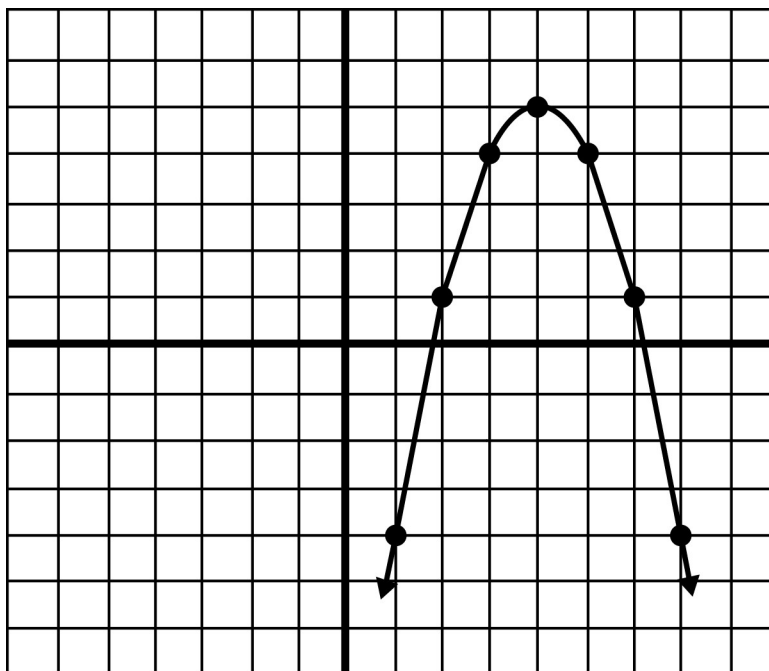


- 4 Pete asked 5 people their ages and the number of times per month they ate fast food. If the data collected is considered as ordered pairs, what is the range?

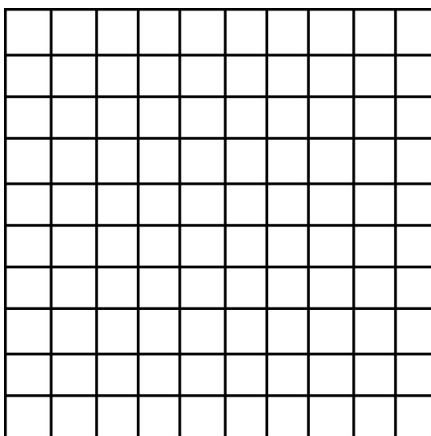
Name	Age	Number of Times (per month)
Ellen	18	20
Mary	23	24
George	50	10
Juan	26	20
Julie	23	12

- F $10 \leq y \leq 24$
 G $18 \leq x \leq 50$
 H $\{18, 23, 26, 50\}$
 J $\{10, 12, 20, 24\}$

5 What is the range of the function shown in the graph?

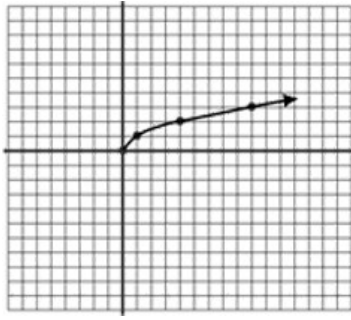


6 Draw the graph, including asymptotes and a few critical points of the parent function $y = \frac{1}{x}$.

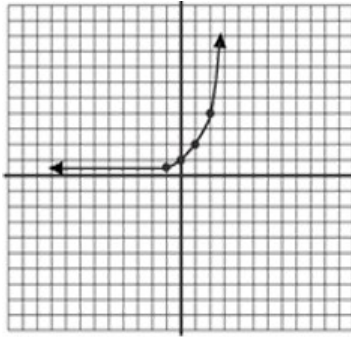


7 Which of the following is a graph of the parent function $y = \log x$?

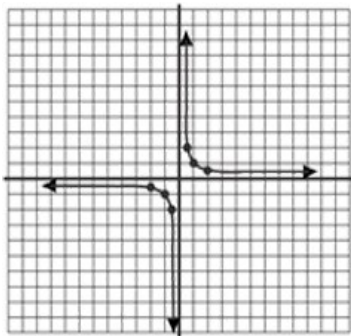
A



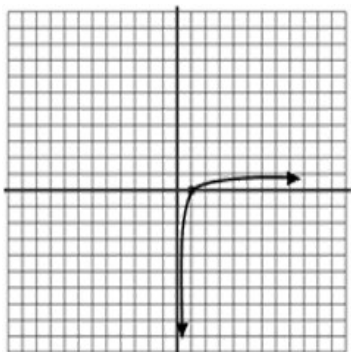
B



C



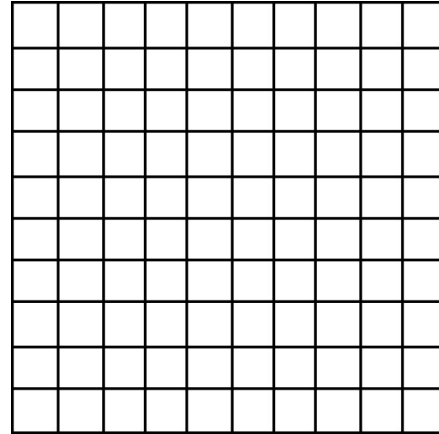
D



8 Alex collected the following data when analyzing the area of a regular quadrilateral.

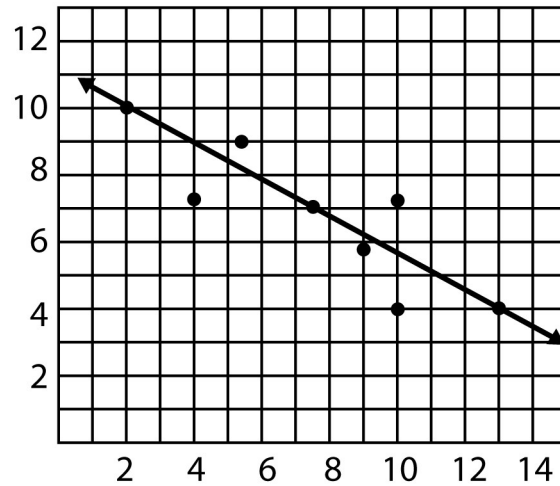
Side Length (cm)	Area (cm ²)
1	1
2	4
3	9
4	16

A. Plot a scatterplot of the data.

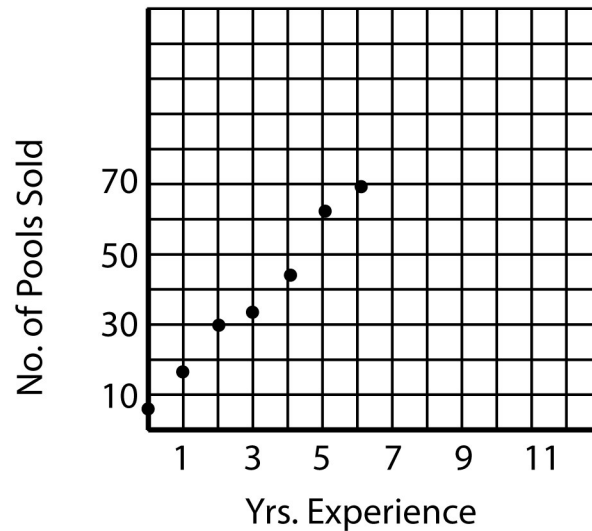


B. The data in the table above is best represented by a portion of which parent function?

9 Write a possible equation for a trend line of this scatterplot.

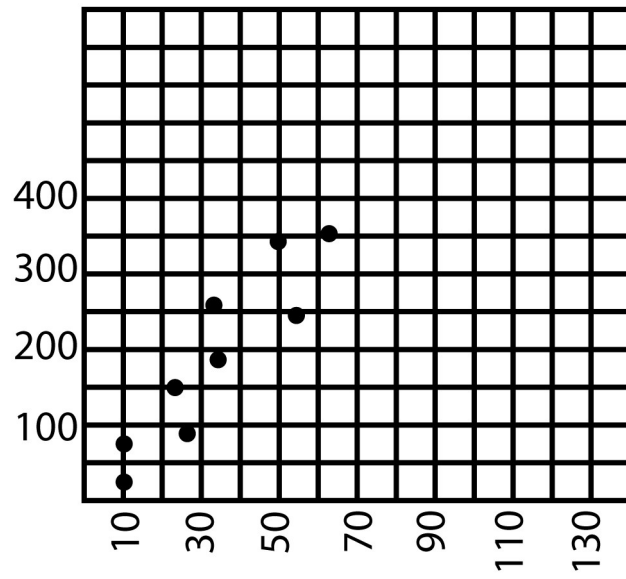


10 A swimming pool company made a scatterplot to show the number of pool sales per year by a salesperson with x years of experience. If a bonus is earned when 90 or more pools are sold in one year, how long might a beginning salesman expect to work before earning the bonus?



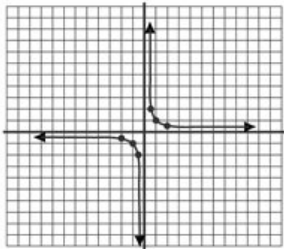
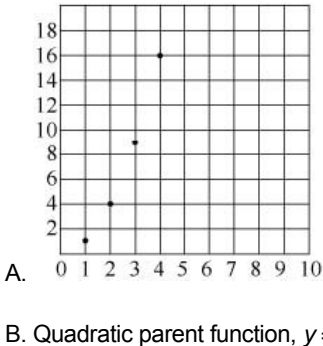
- F 8 years
- G 9 years
- H 11 years
- J 12 years

11 Given the scatterplot, predict x when $y = 650$.



Test Key

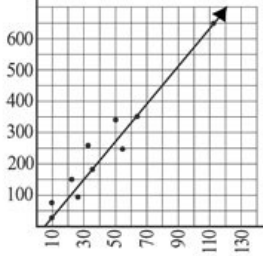
Mathematics Algebra II Unit 01: Introductions to Functions 2013-2014

##	Item #	Correct Answer	Primary SE	Secondary SE	Obj/Cat
1	MA21083098RX	B	A2.1(B) [R]	None	STAAR: Algebra II 1
2	MA21144513D	Domain: $\{x \mid -6 \leq x < 3\} \cup \{x \mid 3 < x < 8\}$ Range: $\{y \mid -7 < y < 8\}$	A2.1(A) [R]	None	STAAR: Algebra II 1
3	MA200152RX	Domain: $\{-3, -1, 2, 4, 6\}$ Range: $\{-2, 1, 2, 4, 6\}$	A2.1(A) [R]	None	STAAR: Algebra II 1
4	MA200153RX	J	A2.1(A) [R]	None	STAAR: Algebra II 1
5	MA21083100RX	$y \leq 5$ $\{y \mid y \in \mathcal{R}, y \leq 5\}$	A2.1(A) [R]	None	STAAR: Algebra II 1
6	MA21083106RX		A2.4(A) [S]	None	STAAR: Algebra II 1
7	MA200201RX	D	A2.4(A) [S]	None	STAAR: Algebra II 1
8	MA21144541D		A2.1(B) [R]	None	STAAR: Algebra II 1
9	MA21083104RX	$f(x) = \frac{-6}{11}x + 11$	A2.1(B) [R]	None	STAAR: Algebra II 1
10	MA21083102RX	F	A2.1(B) [R]	None	STAAR: Algebra II 1
11	MA200164RX	0 to 3	A2.1(B) [R]	None	STAAR: Algebra II 1

Scoring Rubrics

11

Checklist:



$$x \approx 112 - 113$$

(Allow 100-120 depending on the slope of the trend line drawn.)

Rubric:

3	The response shows full understanding of the essential mathematics applicable to the task and a sound approach toward solution that includes logical reasoning and appropriate conclusions. Computation and procedures used are generally accurate, but the response may contain minor computational or procedural flaws that do not detract from evidence of full understanding.
2	The response shows a satisfactory understanding of the essential mathematics applicable to the task, but reasoning may not be completely clear, and there may be minor flaws in computation and/or use of procedures as a result of carelessness or non-essential misunderstandings. The flaws do not detract from evidence of satisfactory understanding. A score of 2 may also be earned if the response is partially correct but some aspect of the task is omitted.
1	The response indicates limited understanding of the essential mathematics applicable to the task. While an effort is made to address the task, omissions and/or errors related to insufficient mathematical knowledge or incorrect application of skills or procedures bring into question that student's ability to deal successfully with tasks of this type.
0	The response indicates no understanding of the essential mathematics applicable to the task, or there is no response.