

1. The amount of time (in minutes) to cook certain vegetables one of two ways is shown below. S-ID.A.2

Steamed: 30, 10, 8, 5, 10, 20, 8, 5, 6, 6
Boiled: 25, 10, 5, 10, 20, 30, 5, 4, 5, 10

- A. What is the median number of minutes for each method?
B. What is the mean number of minutes for each method?
C. What is the IQR for each method?
D. What is the standard deviation for each method?
E. How would you compare the two methods?
2. Data from a random group of students regarding whether they eat or skip breakfast is shown below in a two-way frequency table. S-ID.B.5

	Eat breakfast	Skip breakfast	TOTALS
Ages 10-13	40	14	
Ages 14-17		24	36
TOTALS	52		90

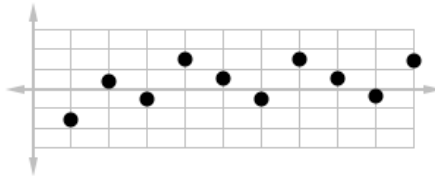
- A. What are the missing values?
B. How many students eat breakfast?
C. What percentage of students are ages 14-17?
D. If you were to construct a two-way row conditional relative frequency table (to the nearest hundredth), what would the entries be in the "Ages 10-13" row?
E. What explanation best supports an "association" between age and breakfast preference?
3. Solve the equation $9x + 4 = 22$. What is the justification for each step? A-REI.A.1
4. You rent a car for \$0.37 per mile and \$12 in fees. A-CED.A.1
A. What equation would best represent this situation?
B. How much are you charged for driving the car 112 miles?
5. Your parents give you \$10 to spend on making your famous Easter Mix of candy for the family. The candy store sells sour discs for \$4 per pound and cinnamon drops for \$2.50 per pound. A-CED.A.2
A. What equation best represents this situation?
B. Graph your equation.
6. What is the solution to the following system of linear equations? A-REI.C.6
$$3x + 4y = 15$$
$$y = 4x - 1$$
7. Graph the solution set to the system of inequalities. A-REI.D.12
$$3x + 2y > 12$$
$$y \leq 4x - 5$$

8. From the National Oceanic and Atmospheric Administration, average March temperatures in Tracy over a 10-year period are shown below.

S-ID.B.6a

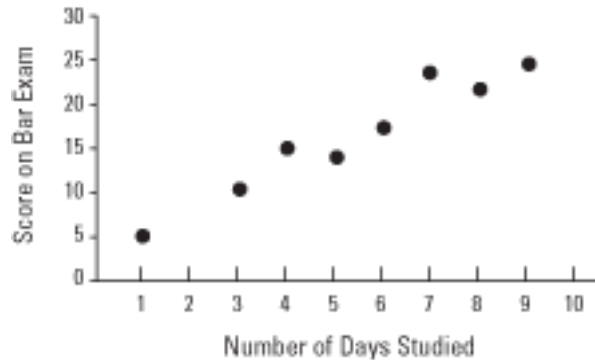
Year	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Volume	52.8	53	53.1	53.3	53.4	53.5	53.7	53.8	53.9	54

- A. What function best fits this data?
 B. What temperature would your model predict for 2018?
 C. Assume the plot of the residuals is shown below. The fit of the function is good, so what is the correct analysis of the residuals?



9. Draw the line of best fit for this data.

S-ID.B.6c



10. Given $f(x) = 5x + 2$, what is $f(11)$?
 11. What point is on the graph if $f(6) = 19$?
 12. Given the function whose table is below:

F-IF.A.2

F-IF.A.2

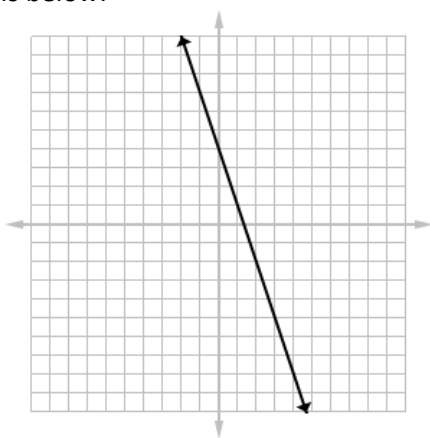
F-IF.B.4

x	-3	-2	-1	0	1	2	3
y	5	0	-3	-4	-3	0	5

- A. What is the x -intercept?
 B. What is the y -intercept?
 C. On what interval is the function increasing?

13. Given the function whose graph is below:

F-IF.B.4

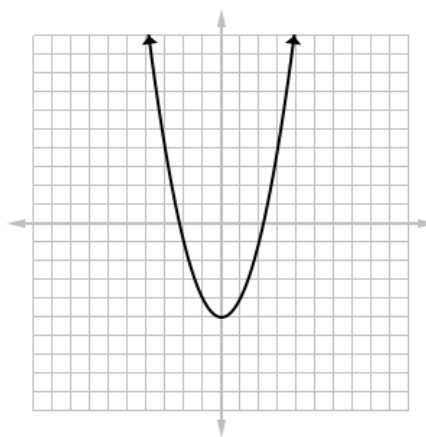
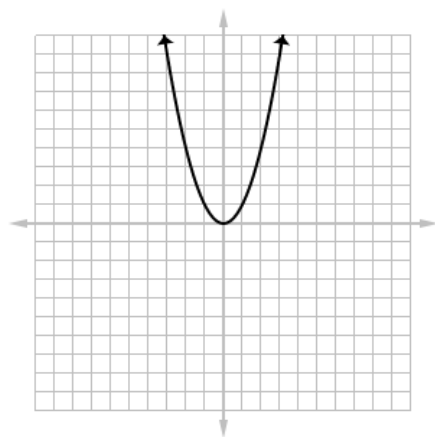


- A. What is the x -intercept?
 B. What are the coordinates of a relative minimum?
 C. On what interval is the function decreasing?
14. Graph $f(x) = (x - 2)^2 + 3$? F-IF.C.7a
15. Given $f(x) = \frac{1}{2}x^2 - 5x + 4$, what is the y -intercept? F-IF.C.7a
16. Given $f(x) = 2(x - 1)^2 - 3$, what are the coordinates of the vertex and does that point represent a maximum or a minimum? F-IF.C.7a
17. Given $f(x) = -2(x + 7)(x - 1)$, what are the x -intercepts? F-IF.C.7a
18. Graph $f(x) = 3|x + 4| - 5$? F-IF.C.7b
19. Graph $f(x) = 3(2^x)$? F-IF.C.7e
20. The height (in feet) of a model rocket is shown in the table below. Write the explicit formula for this situation. F-BF.A.1a

Time	1	2	3	4	5
Height	75	117	127	105	51

21. The path of a water balloon thrown over the fence is modeled by the function $f(x)$. Write the new function if the balloon is instead thrown from 3 feet to the right. F-BF.A.1b
22. A function $f(x)$ is changed to $kf(x)$. What effect does this change have on the graph? F-BF.B.3

23. The graph of $f(x)$ is shown on the left. The function is changed, and the new graph is shown on the right. Write the new function in terms of $f(x)$. F-BF.B.3



24. What are the x -intercepts of $f(x) = 2x^2 - 7x - 4$? A-SSE.B.3a
25. What is the vertex of the function $f(x) = x^2 - 6x + 11$? A-SSE.B.3b
26. Completing the square on $f(x) = x^2 - 10x + 3$ will result in what equation? A-REI.B.4a
27. What are the solutions to $x^2 + 5x - 7 = 0$? A-REI.B.4b
28. If $f(x)$ has constant ratios and $g(x)$ has constant second differences, what equations could represent $f(x)$ and $g(x)$? F-LE.A.1a
29. Describe a situation where the quantity changes at a decreasing rate. F-LE.A.1b
30. What would be the best description of how the number of virus cells in a sick person changes over time? F-LE.A.1c
31. What is the solution to the system of equations pictured below? A-REI.D.11

