STAAR Spring 2024 Algebra 1 Answer Key

Item Position	Item Type	TEKS Alignment	Maximum Number of Points	Correct Answer(s)	Report Category	Readiness or Supporting
1	Multiple Choice	A1.1.11.A	1	D	1	Supporting
2	Multiple Choice	A1.4.6.C	1	A	4	Supporting
3	Drag and Drop	A1.3.2.D	2	–3, 18 See Appendix 1.1	3	Supporting
4	Multiple Choice	A1.4.7.A	1	A	4	Readiness
5	Multiple Choice	A1.5.9.B	1	C	5	Supporting
6	Multiple Choice	A1.1.11.B	1	B	1	Readiness
7	Multiple Choice	A1.2.3.B	1	C	2	Readiness
8	Drag and Drop	A1.1.12.D	2	–14, 61 See Appendix 1.2	1	Supporting
9	Multiple Choice	A1.4.6.A	1	D	4	Readiness
10	Multiple Choice	A1.2.4.A	1	A	2	Supporting
11	Multiple Choice	A1.5.9.D	1	C	5	Readiness
12	Graphing	A1.2.3.D	2	Solid line going through (0, –2) and (2, –1); shading the area that includes the point (0, 0) See Appendix 1.3	2	Readiness
13	Multiple Choice	A1.3.5.C	1	A	3	Readiness
14	Multiple Choice	A1.3.2.C	1	C	3	Readiness
15	Multiple Choice	A1.2.3.G	1	B	2	Supporting

16	Multiple Choice	A1.1.10.E	1	A	1	Readiness
17	Multiple Select	A1.5.9.A	2	B, D See Appendix 1.4	5	Supporting
18	Multiple Choice	A1.4.8.A	1	B	4	Readiness
19	Multiple Choice	A1.5.9.C	1	C	5	Readiness
20	Multiple Choice	A1.2.4.B	1	A	2	Supporting
21	Multiple Choice	A1.4.7.C	1	B	4	Readiness
22	Graphing	A1.2.3.C	1	Line going through (0, 2) and (3, 0) See Appendix 1.5	2	Readiness
23	Multiple Choice	A1.3.2.A	1	B	3	Readiness
24	Multiple Choice	A1.3.5.A	1	A	3	Readiness
25	Drag and Drop	A1.4.7.A	2	minimum, –4 See Appendix 1.6	4	Readiness
26	Multiple Choice	A1.3.2.I	1	B	3	Readiness
27	Multiple Choice	A1.5.9.D	1	C	5	Readiness
28	Multiple Choice	A1.3.2.E	1	B	3	Supporting
29	Multiple Choice	A1.4.7.C	1	B	4	Readiness
30	Inline Choice	A1.2.3.B	2	decreases, 3,000 See Appendix 1.7	2	Readiness
31	Multiple Choice	A1.4.8.A	1	D	4	Readiness
32	Multiple Choice	A1.4.6.A	1	D	4	Readiness

33	Multiple Choice	A1.1.11.B	1	B	1	Readiness
34	Drag and Drop	A1.4.7.B	2	$(2x + 3)$, $(x - 5)$ See Appendix 1.8	4	Supporting
35	Multiple Choice	A1.1.10.A	1	C	1	Supporting
36	Multiple Choice	A1.3.2.C	1	C	3	Readiness
37	Multiple Choice	A1.1.10.E	1	D	1	Readiness
38	Inline Choice	A1.2.3.E	2	less steep than, greater than See Appendix 1.9	2	Supporting
39	Multiple Choice	A1.3.2.I	1	A	3	Readiness
40	Multiple Choice	A1.4.6.B	1	C	4	Supporting
41	Multiple Choice	A1.2.3.D	1	A	2	Readiness
42	Multiple Choice	A1.3.5.C	1	D	3	Readiness
43	Equation Editor	A1.5.9.C	1	$500(1.02)^x$ See Appendix 1.10	5	Readiness
44	Multiple Choice	A1.1.12.A	1	C	1	Supporting
45	Multiple Choice	A1.2.3.F	1	B	2	Supporting
46	Multiple Choice	A1.3.5.A	1	D	3	Readiness
47	Drag and Drop	A1.1.10.F	2	$2x + 9$, $2x - 9$ See Appendix 1.11	1	Supporting
48	Multiple Choice	A1.1.12.B	1	C	1	Supporting
49	Multiple Choice	A1.3.2.A	1	B	3	Readiness

50	Multiple Choice	A1.2.3.C	1	A	2	Readiness

STAAR Spring 2024 Algebra 1 Appendix

1.1

The value of y varies directly with x. When the value of x is 4, the value of y is −12.

What is the constant of variation when y is a function of x, and what is the value of y when $x = -6$?

Move the correct answer to each box. Each answer may be used more than once. Not all answers will be used.

−18 | −3 | −2 | $-\frac{1}{3}$ | $\frac{1}{3}$ | 2 | 3 | 18

The constant of variation is [−3].

The value of y when $x = -6$ is [18].

1.2

The first five terms of a sequence are $a_1 = 47$, $a_2 = 33$, $a_3 = 19$, $a_4 = 5$, and $a_5 = -9$.

Based on this information, create an equation that can be used to find the nth term of the sequence, a_n. Move the correct answer to each box. Each answer may be used more than once. Not all answers will be used.

−61 | −47 | −14 | 14 | 47 | 61

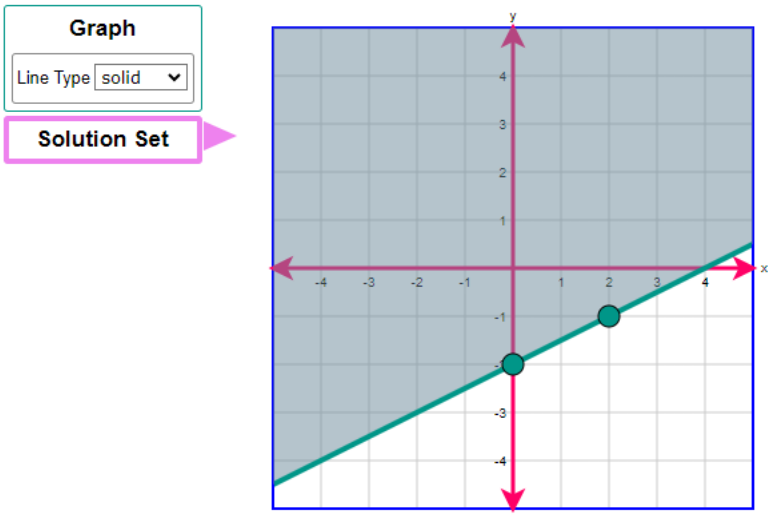
$a_n =$ [−14] $n +$ [61]

1.3

What is the solution set that best represents the inequality $y \geq \frac{1}{2}x - 2$?

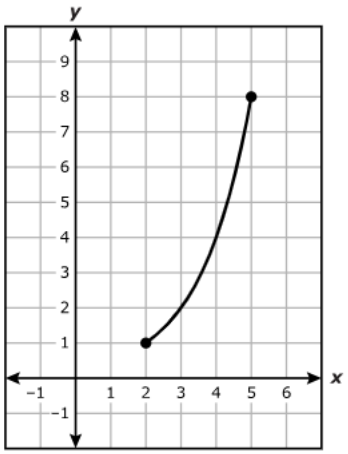
Graph the solution set of the linear inequality in the coordinate plane.

- First, select the Graph button to graph the line and choose the line style. To graph a line, select two points in the coordinate plane. A line will connect the points.
- Then select the Solution Set button to select the desired region.



1.4

A part of an exponential function is graphed on the grid.



Which statements are true about the domain and range of the part of the function shown?

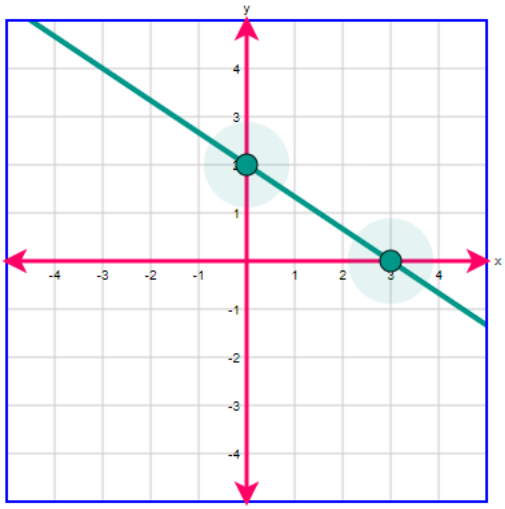
Select **TWO** correct answers.

- [ ] The domain is the set of all real numbers greater than or equal to 1 and less than or equal to 8.
- [x] The domain is the set of all real numbers greater than or equal to 2 and less than or equal to 5.
- [ ] The domain is the set of all real numbers.
- [x] The range is the set of all real numbers greater than or equal to 1 and less than or equal to 8.
- [ ] The range is the set of all real numbers greater than or equal to 2 and less than or equal to 5.
- [ ] The range is the set of all real numbers.

1.5

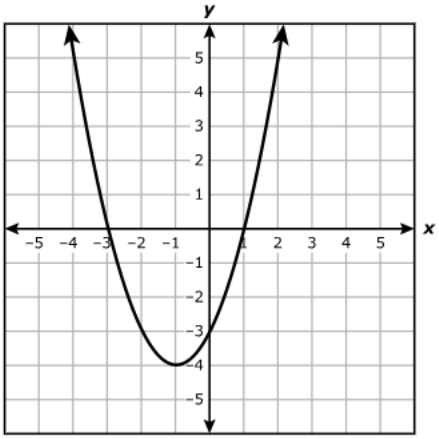
Graph the line represented by the equation $2x + 3y = 6$.

Select two points on the coordinate grid. A line will connect the points.



1.6

A graph of a quadratic function is shown on the grid.



Complete the statement about the quadratic function.

Move the correct answer to each box. Not all answers will be used.

minimum | maximum | −4 | −3 | −1 | 0 | 1

The function has a [minimum] value of [−4].

1.7

The altitude of an airplane is changing at a constant rate. The table shows the linear relationship between y, the altitude of the airplane in feet, and x, the time in minutes.

Airplane's Altitude

Time, x (minutes)	Altitude, y (feet)
1.5	25,500
3.25	20,250
6	12,000

Complete the statement that describes the rate of change of the altitude of the airplane with respect to time.

Choose the correct answer from each drop-down menu to complete the sentence.

The altitude of the airplane [decreases] at a rate of [3,000] feet per minute.

1.8

For quadratic function h, $h\left(-\frac{3}{2}\right) = 0$ and $h(5) = 0$. What is a possible equation for h in factored form?

Move the correct answer to each box. Not all answers will be used.

$(x + 5)$ $(x - 5)$ $(2x - 3)$ $(2x + 3)$ $(3x - 2)$ $(3x + 2)$

$h(x) =$ $(2x + 3)$ $(x - 5)$

1.9

The graph of $f(x) = x$ is transformed to create the graph of $g(x) = \frac{1}{2}f(x) + 3$. Complete the statement to compare the graphs of f and g.

Choose the correct answer from each drop-down menu to complete the sentence.

The graph of g is [less steep than] the graph of f and has a y-intercept that is [greater than] that of f.

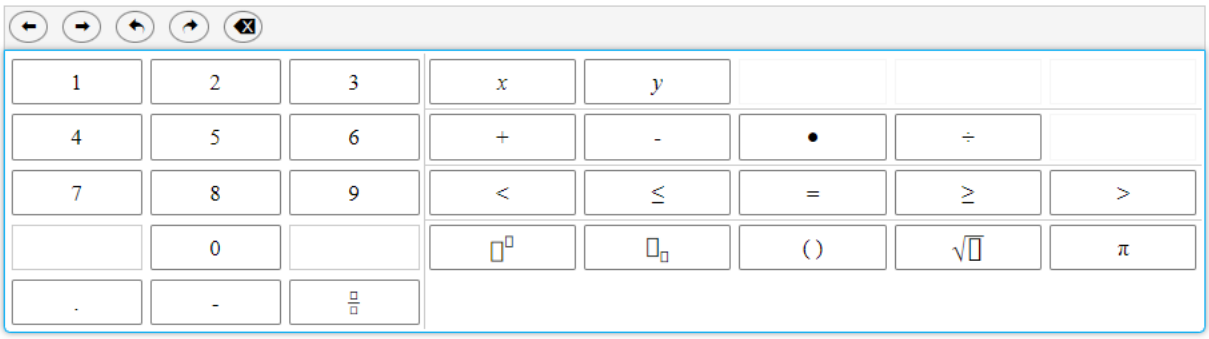
1.10

A company currently has 500 employees. The number of employees is expected to grow at a rate of 2% each year.

Write an exponential function to model the number of employees in the company, y, after x years.

Enter your answer in the box provided.

$y = 500(1.02)^x$



1.11

Choose two factors to create an expression equivalent to $4x^2 - 81$.

Move the correct answer to each box. Each answer may be used more than once. Not all answers will be used.

$9x - 2$ $2x - 9$ $4x - 9$ $9x + 2$ $2x + 9$ $4x + 9$

$4x^2 - 81 = (\boxed{2x + 9})(\boxed{2x - 9})$