Algebra I EOI Test review

1. When a number is multiplied by six and the product is decreased by nine, the final result is 33. Which equation represents this statement?

A $6x - 9 = 33$

B $9 - 6x = 33$

C $6(x - 9) = 33$

D $9(x - 6) = 33$

2. $n = 6n - 4$

Which sentence represents this equation?

A Six times a number is 4 less than the number.

B A number is 4 minus the product of 6 and the number.

C A number is 4 less than the product of the number and 6.

D Six times the difference of a number and 4 is equal to the number.

3. Anne practiced piano for x hours. Steve practiced piano three more hours than Anne. Kate practiced piano five times as long as Steve. Which expression represents the total time they practiced piano?

A $x + 3 + 5x$

B $x + 5(x + 3)$

C $x + x + 3 + 5x$

D $x + x + 3 + 5(x + 3)$

4. Sue's age is twelve years less than twice Jack's age. Let J represent Jack's age and S represent Sue's age. Which equation represents Sue's age?

A $S = 2(12 - J)$

B $S = 2(J - 12)$

C $S = 12 - 2J$

D $S = 2J - 12$

5. $2(x + y) - z = 2x + z$

Which equation is equivalent to the equation above when solved for y?

A $y = 1$

B $y = z$

C $y = 1 + 4x$

D $y = z + 4x$

6. The surface area of a sphere with radius r is given by the equation $S = 4\pi r^2$. Which equation is equivalent to the given equation when solved for r?

A $r = \frac{\sqrt{S}}{4\pi}$

B $r = \frac{\sqrt{S}}{2\pi}$

C $r = \sqrt{\frac{S}{4\pi}}$

D $r = \sqrt{\frac{S}{16\pi}}$

7. $\frac{1 - 4x}{2 + x} = \frac{3 - 4y}{y}$

If y is a non-zero constant, which equation represents the value of x in the given equation?

A $x = 3y - 2$

B $x = 3y + 2$

C $x = 9y - 6$

D $x = 9y + 6$

8. A drink container is shaped like a cylinder. The height of the container is 10 centimeters, and the radius of the container is 6 centimeters. What is the approximate volume of the container? (Use 3.14 for π.)

$V = \pi r^2 h$

A 283 cubic centimeters

B 360 cubic centimeters

C 452 cubic centimeters

D 1,131 cubic centimeters

Algebra I EOI Test review

9. The temperature of a gas is −76° Fahrenheit. What is the temperature of the gas in degrees Celsius?

$$F = \frac{9}{5}C + 32$$

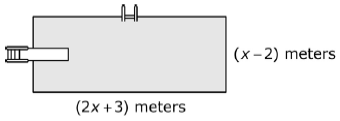
A −96 °C

B −60 °C

C −44 °C

D −25 °C

10.



A rectangular swimming pool has the measurements shown. The perimeter of the swimming pool is 80 meters. What is the value of x?

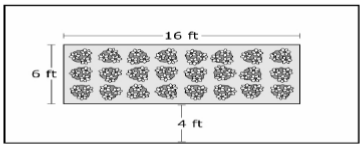
A 11

B 13

C 25

D 27

11. A rectangular garden with a 4-foot wide cement sidewalk is shown. The cement for the sidewalk is $\frac{1}{2}$ foot deep.



$V = lwh$

What volume of cement is needed for the sidewalk?

A 96 cubic feet

B 120 cubic feet

C 192 cubic feet

D 240 cubic feet

12. The circumference of a circle is 10π inches. What is the area of the circle?

$$A = \pi r^2$$
$$C = 2\pi r$$

A 5π square inches

B 10π square inches

C 25π square inches

D 100π square inches

13. The weights and prices of four brands of dog food are shown in this table.

Dog Food Prices

Brand	W	X	Y	Z
Weight (in pounds)	8	10	20	30
Price	$7.49	$9.99	$17.99	$28.99

Which brand has the lowest unit price?

A Brand W

B Brand X

C Brand Y

D Brand Z

14. At a candle store, the ratio of green candles to red candles is 2 to 5. The store has 4,900 candles. How many candles are red?

A 350 red candles

B 700 red candles

C 1,400 red candles

D 3,500 red candles

15. At a football game, 80% of the fans were rooting for the Rams. Of the fans rooting for the Rams, 20% bought souvenir footballs. What percent of the fans at the game rooted for the Rams and bought souvenir footballs?

A 4%

B 16%

C 60%

D 100%

16. A drink dispenser fills cups at a rate of 2 ounces per second. Adrian has a 64-ounce cup that already contains 18 ounces of water. How long will it take the dispenser to fill the rest of Adrian's cup with water?

A 9 seconds

B 23 seconds

C 92 seconds

D 128 seconds

17. Antonio read the first 60 pages of his book in 40 minutes. At this rate, how long should it take Antonio to read the rest of his 210-page book?

A 100 minutes

B 130 minutes

C 135 minutes

D 225 minutes

Algebra I EOI Test review

18. An *angstrom* is a unit of length defined as 10^{-8} centimeters. Using a microscope, a scientist is looking at a particle 10^{3} angstroms long. What is the length of the particle in centimeters?

A 10^{-24} centimeters

B 10^{-11} centimeters

C 10^{-5} centimeters

D 10^{-3} centimeters

19. The snowfall in Jackson Creek was recently measured at 0.4 inches per hour over a period of 9 hours and 30 minutes. How many inches of snow did Jackson Creek receive?

A 3.41 inches

B 3.60 inches

C 3.72 inches

D 3.80 inches

20. Sarah drove her boat at 5 miles per hour for 45 minutes and at 4 miles per hour for 30 minutes. What was the total distance, in miles, that Sarah drove her boat?

A 2 miles

B $5\frac{3}{4}$ miles

C 9 miles

D $16\frac{1}{2}$ miles

21. When $x = 8$, what is the value of $4x - \frac{1}{2}x$?

A 24

B 28

C 32

D 36

22. What is the value of $|y - 4|$ when $y = -7$?

A -11

B -3

C 3

D 11

23. What is the value of the expression $(3m - 2(-n) - mn)$ when $m = 3$ and $n = -2$?

A -1

B 7

C 11

D 19

24. $\frac{2\sqrt{2}\sqrt{8}}{\sqrt{4}}$

What is the simplified value of this expression?

A $\sqrt{8}$

B $\sqrt{10}$

C 4

D 8

25. $\frac{3}{\sqrt{2}}$

What is the simplified value of this expression?

A $\frac{\sqrt{3}}{2}$

B $\frac{3\sqrt{2}}{2}$

C $2\sqrt{3}$

D $3\sqrt{2}$

26. $(2x + 3) - (3x - 4)$

What is the simplified value of this expression?

A $-x - 1$

B $-x + 7$

C $5x + 1$

D $5x - 7$

27. $2x + 5y + 7x - y$

What is the simplified form of this expression?

A $9x + 4y$

B $9x + 5y$

C $9x + 6y$

D $9x - 4y$

Algebra I EOI Test review

28.

$3x^2 + 8x - 10$

$-5x^2 - 4x - 2$

What is the sum of these two expressions?

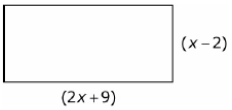
A $2x^2 + 4x - 8$

B $-2x^2 + 4x - 8$

C $2x^2 + 4x - 12$

D $-2x^2 + 4x - 12$

29.



What is the area of the rectangle?

A $2x^2 - 18$

B $2x^2 + 5x - 18$

C $2x^2 - 13x - 18$

D $2x^2 + 13x - 18$

30. Which expression is the factored equivalent of $x^3y^2 + x^2y^2$?

A $x(x^2y^2)$

B $y(x^2y^2)$

C $x^2y^2(y + 1)$

D $x^2y^2(x + 1)$

31. Which expression is the factored equivalent of $3x^2 - 4x + 1$?

A $(3x - 1)(x - 1)$

B $(3x - 1)(x + 1)$

C $(3x + 1)(x - 1)$

D $(3x + 1)(x + 1)$

32. Which expression is a factor of $4x^2 + 2x - 2$?

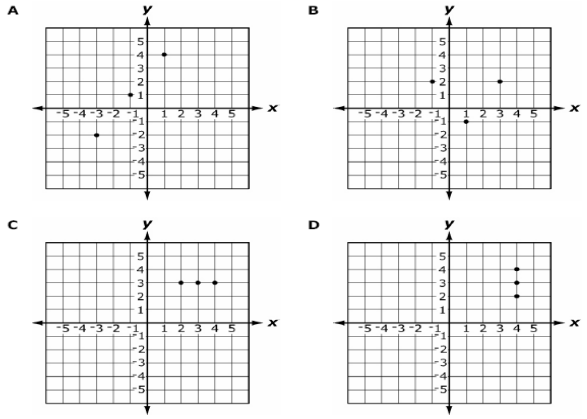
A $(x - 1)$

B $(x + 1)$

C $(x - 2)$

D $(x + 2)$

33. Which graph shows points that represent a nonlinear relation?



34. Which set of data represents a linear relation?

A

x	y
10	3
15	6
25	9
30	12

B

x	y
13	7
15	10
17	13
19	16

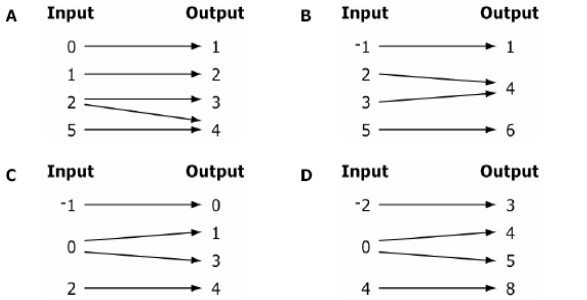
C

x	y
1	1
2	4
4	16
8	64

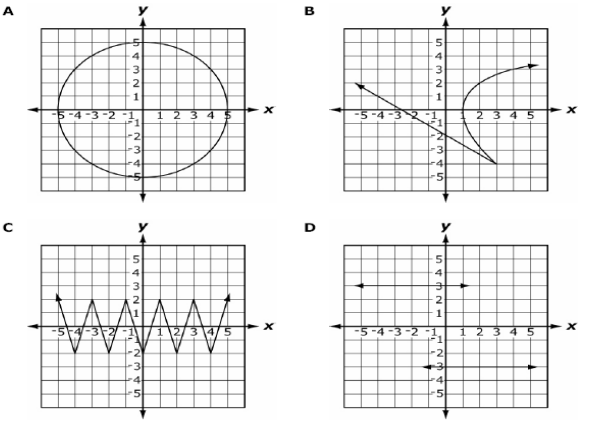
D

x	y
0	1
2	11
3	17
5	26

35. Which relation diagram represents a function?



36. Which graph represents a function?



Algebra I EOI Test review

37.

Which set of ordered pairs represents a function?

A $\{(2, 1), (2, 2), (2, 3)\}$

B $\{(4, 2), (2, 4), (4, 4)\}$

C $\{(0, 0), (0, 1), (1, 0), (1, 1)\}$

D $\{(1, 1), (2, 2), (3, 3), (4, 4)\}$

38.

Which set of data represents a function?

A

x	y
3	-6
3	8
3	-10
3	12

B

x	y
-2	-3
-2	3
0	7
0	-10

C

x	y
0	8
2	-1
2	-1
5	4

D

x	y
-4	-4
-2	-2
1	0
1	1

39.

$\{(0, 1), (2, 4), (4, 2), (4, 8), (8, 2), (8, 5)\}$

Which set of numbers represents the domain?

A $\{1, 2, 4, 5, 8\}$

B $\{0, 2, 4, 8\}$

C $\{0, 1, 2, 4, 8\}$

D $\{0, 1, 2, 4, 5, 8\}$

40.

$\{(0, 1), (2, 2), (4, 3), (8, 4)\}$

Which set of numbers represents the range?

A $\{0, 2, 4, 8\}$

B $\{1, 2, 4, 8\}$

C $\{1, 2, 3, 4\}$

D $\{0, 1, 2, 3, 4, 8\}$

41.

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

The table shows a relationship between x and y. Which set represents the range?

A $\{-4, -1, 0, 3\}$

B $\{-2, -1, 0, 1\}$

C $\{-4, -2, -1, 1, 3\}$

D $\{-4, -2, -1, 0, 1, 3\}$

42.

John owns a window-cleaning business. He charges different prices for cleaning windows of different sizes. What are the independent and dependent variables?

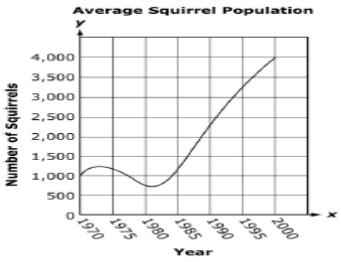
A Independent variable: window size
Dependent variable: type of business

B Independent variable: window size
Dependent variable: price charged

C Independent variable: type of business
Dependent variable: price charged

D Independent variable: price charged
Dependent variable: window size

43.



The graph shows the average squirrel population in a city park from the years 1970 to 2000. What are the domain and range of the data shown on the graph?

A Domain: All real numbers
Range: All real numbers

B Domain: $1970 \le x \le 2,000$
Range: $0 \le y \le 4,000$

C Domain: $1970 \le x \le 2,000$
Range: $700 \le y \le 4,000$

D Domain: $700 \le x \le 4,000$
Range: $1970 \le y \le 2,000$

44.

$y = 2x - 5$

What is the value of x when $y = 1$?

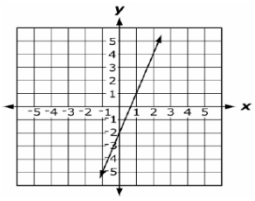
A -5

B -3

C 1

D 3

45.



What is the value of y when x is 2?

A 4

B $\frac{4}{3}$

C -2

D -8

Algebra I EOI Test review

46. $f(x) = x^2 - 3x$

What is the value of $f(5)$?

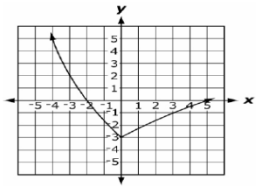
A 4

B 8

C 10

D 16

47. The graph of the function $y = f(x)$ is shown.



What is $f(-3)$?

A -3

B -1

C 0

D 2

48. The function $f(x)$ is linear.

x	$f(x)$
-2	-9
-1	-5
0	-1

What is the value of $f(2)$?

A -6

B 2

C 3

D 7

49. If $f(x) = 2x - 5$, which expression represents $f(x + 1)$?

A $2x - 3$

B $2x - 4$

C $2x - 5$

D $2x + 7$

50. Which ordered pair is a solution to the equation $y = 2x - 1$?

A $(-2, 5)$

B $(1, -3)$

C $(2, -5)$

D $(-1, -3)$

51. $2x - 5 = 7$

What value of x is a solution to this equation?

A 1

B 6

C 12

D 24

52. The equation below represents the cost (y) of a large pizza with different numbers of toppings (x).

$$y = 10.25 + 1.25x$$

Before tax, Carla paid $19.00 for a large pizza. How many toppings were on Carla's pizza?

A 6 toppings

B 7 toppings

C 8 toppings

D 9 toppings

53. The profit (P) an ice cream store makes in one day when producing x gallons of ice cream is given by the equation $P = 60x - 420$. For what value of x is the store's profit equal to 0?

A 0

B 1

C 7

D 8

54. Brad graduated from college and started a new job. This table shows his yearly salary (y) for each year (x) for the next four years.

Yearly Salary

Year (x)	Salary (y)
1	$36,500
2	$38,600
3	$40,700
4	$42,800

If Brad's salary continues to increase at the same rate, what will be his salary for the 7th year at this job?

A $44,900

B $47,000

C $49,100

D $51,200

55. Tina will set up chairs (c) for a concert. She will set up 20% more chairs than the number of tickets (t) sold. There were 130 tickets sold. How many chairs will Tina set up?

A 26 chairs

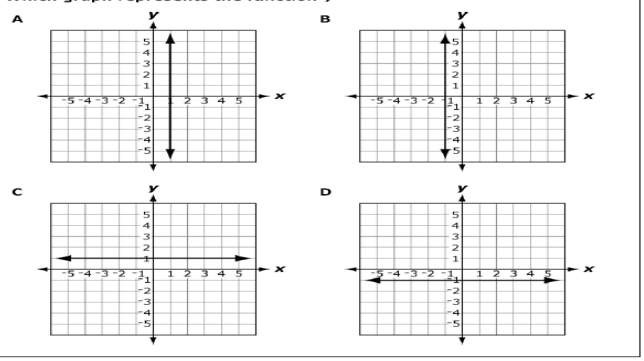
B 104 chairs

C 150 chairs

D 156 chairs

Algebra I EOI Test review

56. Which graph represents the function $y = 1$?



57. **What happens to the *y*-intercept of $y = x$ when the function changes to $y = x + 4$?**

A The *y*-intercept does not change.

B The *y*-intercept changes from 0 to 4.

C The *y*-intercept changes from 0 to −4.

D The *y*-intercept becomes equal to the *x*-intercept.

58. **What happens to the slope and *y*-intercept of $y = x$ when the equation changes to $y = 2x - 6$?**

A The slope changes to 2, and the *y*-intercept changes to 6.

B The slope changes to −6, and the *y*-intercept changes to 2.

C The slope changes to 2, and the *y*-intercept changes to −6.

D The slope changes to −6, and the *y*-intercept changes to −2.

59. **What happens to the graph of $y = |x|$ when the equation changes to $y = |x| + 4$?**

A The graph shifts up 4 units.

B The graph shifts left 4 units.

C The graph shifts right 4 units.

D The graph shifts down 4 units.

60. **What happens to the graph of $y = |x|$ when the equation changes to $y = |x - 2|$?**

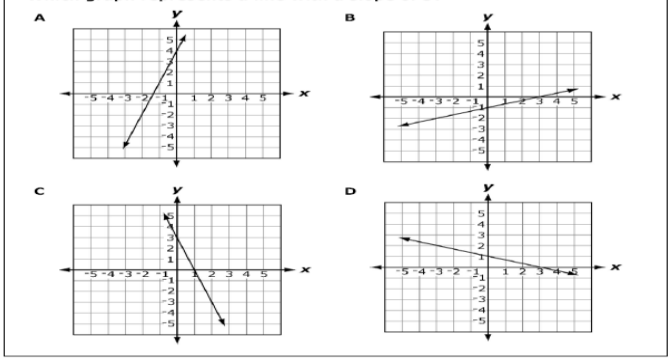
A The graph shifts up 2 units.

B The graph shifts left 2 units.

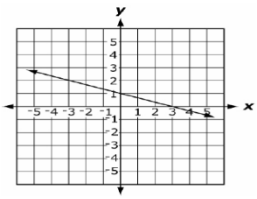
C The graph shifts right 2 units.

D The graph shifts down 2 units.

61. Which graph represents a line with a slope of 3?



62.



What is the slope of this graphed line?

A −3

B $-\frac{1}{3}$

C $\frac{1}{3}$

D 3

63. **What is the slope of the line that passes through the points (−5, 2) and (2, 3)?**

A $\frac{1}{7}$

B $\frac{1}{3}$

C 3

D 7

64.

x	y
0	-4
2	8
4	20

What is the slope of the line that passes through the points in this table?

A −6

B −4

C 5

D 6

Algebra I EOI Test review

65. $-2x + 3y = -6$

What is the slope of this line?

A -2

B $\frac{-2}{3}$

C $\frac{2}{3}$

D 2

66. **Which equation represents a horizontal line?**

A $y = x$

B $x = 3$

C $y = 5$

D $x = -y$

67. **What is the slope of the line perpendicular to $y = 2x + 3$?**

A $\frac{-1}{3}$

B $\frac{-1}{2}$

C 2

D 3

68. **Which equation represents a line parallel to the line $y = \frac{-1}{3}x - 2$?**

A $y = \frac{-1}{3}x - 8$

B $y = -3x - 2$

C $y = \frac{1}{3}x - 2$

D $y = 3x - 8$

69. $y = -2x + 5$

$y = \frac{1}{2}x + 2$

Which statement is <u>true</u> about these equations?

A The equations represent parallel lines.

B The equations represent the same line.

C The equations represent perpendicular lines.

D The equations represent lines that intersect but are not perpendicular.

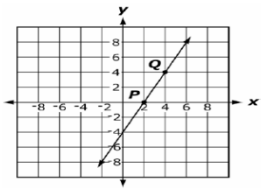
70. **Which statement describes the line that contains the points $(-3, 4)$ and $(-3, 5)$?**

A The line is vertical.

B The line is horizontal.

C The line has a positive slope.

D The line has a negative slope.

71. 

Which equation represents a line that is perpendicular to this graphed line?

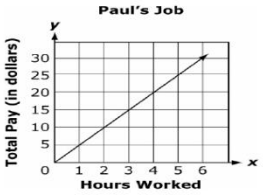
A $y = \frac{-1}{2}x + 2$

B $y = \frac{1}{2}x - 2$

C $y = -2x + 2$

D $y = 2x - 2$

72. **The graph shows the hours worked and total pay for Paul's part-time job.**



What does the slope of this graph represent?

A hourly pay

B days worked

C hours worked

D money earned

73. **The table shows how much Donna charges for doing yard work. She charges a fixed fee plus an hourly rate.**

Donna's Yard Service

Hours Worked	1	2	3	4	5
Amount Charged	$11	$17	$23	$29	$35

What is Donna's hourly rate?

A $5.50 per hour

B $6.00 per hour

C $8.50 per hour

D $11.00 per hour

Algebra I EOI Test review

74. **The table shows delivery service charges according to the number of miles traveled to make the delivery.**

Delivery Service Charges

Miles Traveled	Charge
1	$14.00
2	$21.00
3	$28.00
4	$35.00

What does the slope of the linear relationship in the table represent?

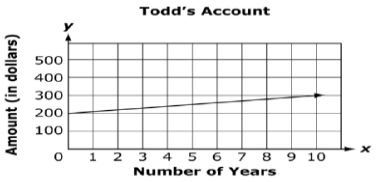
A the ratio of the amount charged to miles traveled

B the ratio of the miles traveled to the amount charged

C the ratio of the change in miles traveled to the change in the amount charged

D the ratio of the change in the amount charged to the change in miles traveled

75. **Todd deposited $200 in his account. The graph shows how the money in his account will increase over the next ten years.**



What does the *y*-intercept of this graph represent?

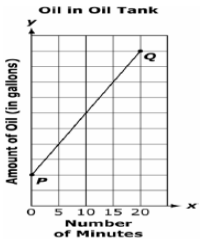
A the rate of interest

B the increase per year

C the amount of money earned

D the original amount deposited

76. **An oil tank contains 100 gallons of oil when Paul starts to fill it. Paul pumps oil at the rate of 20 gallons per minute. The graph shows the number of minutes Paul pumps oil into the tank and the amount of oil, in gallons, in the tank.**



Based on the graph, which statement is true?

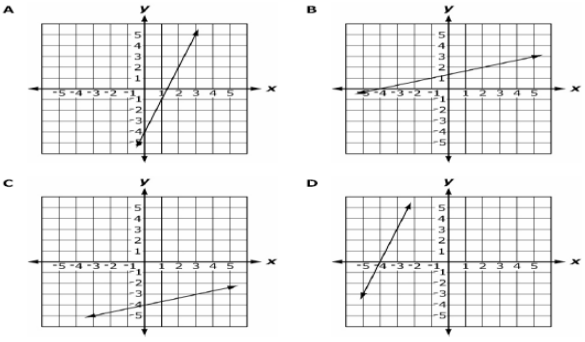
A The slope of line PQ is 20.

B The slope of line PQ is 100.

C The value of *y* at point P is 20.

D The value of *y* at point Q is 100.

77. **Which graph represents a line with a *y*-intercept of −4 and a slope of 3?**



78. **What is the equation of the line that has a slope of −5 and passes through the *y*-axis at 2?**

A $y = -5x - 2$

B $y = -5x + 2$

C $y = -5(x - 2)$

D $y = -5(x + 2)$

79. **What is the equation of the line with a slope of −2 that passes through the point (4, −3)?**

A $y + 4 = 3(x - (-2))$

B $y + 3 = 4(x - (-2))$

C $y + 4 = -2(x - 3)$

D $y + 3 = -2(x - 4)$

80.

x	*y*
10	60
20	120
30	180
40	240

What is the equation of the line that passes through the points in this table?

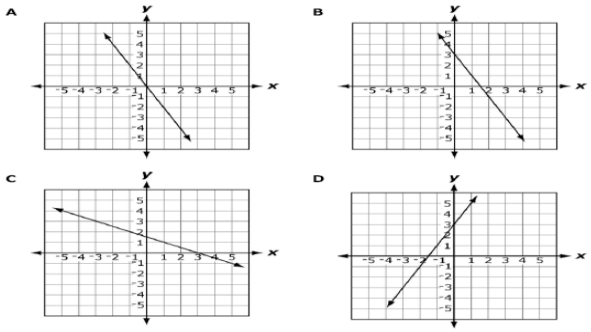
A $y = 6x$

B $y = 60x$

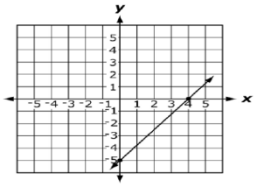
C $y = 6x + 10$

D $y = 60x + 10$

81. **Which graph represents a line with a slope of −2 that passes through the point (−1, 2)?**



82.



What is the equation of this graphed line?

A $y = \frac{4}{5}x + 5$

B $y = \frac{5}{4}x + 5$

C $y = \frac{4}{5}x - 5$

D $y = \frac{5}{4}x - 5$

Algebra I EOI Test review

83. **What is the function of the line that contains the points (10, −2) and (20, −12)?**

A $f(x) = x - 8$

B $f(x) = -x + 8$

C $f(x) = x - 12$

D $f(x) = -x + 12$

84.

x	y
2	5
3	7
4	9

What is the equation of the line that passes through the points in this table?

A $y = 2x + 5$

B $y = 2x + 1$

C $y = \frac{3}{4}x - 6$

D $y = \frac{3}{4}x + 12$

85. **What is the equation of the line with a slope of 3 that passes through the *x*-axis at −1?**

A $y = 3x - 1$

B $y = 3x + 1$

C $y = 3x - 3$

D $y = 3x + 3$

86. **What is the equation of the line that passes through the points (−2, 4) and (3, −1)?**

A $y = -x + 2$

B $y = 3x - 2$

C $y = -x + 6$

D $y = \frac{-3}{5}x + \frac{14}{5}$

87. **The population of a small town in 1990 was 1,200 people, and the population in 2000 was 2,700 people. Let *x* represent the number of years since 1990. Let *y* represent the population. Which linear equation represents this data?**

A $y = 150x + 1{,}200$

B $y = 150x + 2{,}700$

C $y = 1{,}200x + 2{,}700$

D $y = 2{,}700x + 1{,}200$

88. **What is the equation of the line with an *x*-intercept of 3 and a *y*-intercept of −6?**

A $y = 2x + 3$

B $y = 2x - 6$

C $y = 3x + 3$

D $y = 3x - 6$

89. **A furnace technician charges $20 per hour and a one-time service charge of $30. Which equation represents the total charge (*y*) for working *x* hours?**

A $y = 20x + 30$

B $y = 30x + 20$

C $y = 20(x - 30)$

D $y = 20(x + 30)$

90. **The table shows the amount Donna charges (*y*) for doing yard work. She charges a fixed fee plus an hourly rate.**

Donna's Yard Service

Hours Worked	1	2	3	4	5
Amount Charged	$11	$17	$23	$29	$35

Which equation represents the amount Donna charges for working *x* hours?

A $y = x + 6$

B $y = x + 10$

C $y = 5x + 6$

D $y = 6x + 5$

91. **The table shows how the length (*s*) of a spring changes when a weight (*w*) at the end of the spring is increased.**

Weight (in pounds)	0.0	0.5	1.0	1.5	2.0
Length of Spring (in inches)	4.0	4.8	5.6	6.4	7.2

Which equation models this situation?

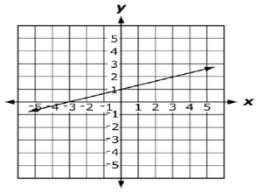
A $s = 0.8w + 4$

B $s = 1.6w + 4$

C $s = 3w + 1.2$

D $s = 4w + 0.8$

92.



What is the equation of this graphed function?

A $y = \frac{x}{3} + 1$

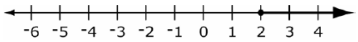
B $y = \frac{x}{3} - 3$

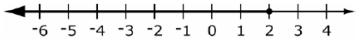
C $y = 3x + 1$

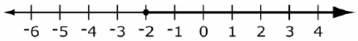
D $y = 3x - 3$

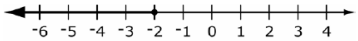
Algebra I EOI Test review

93. **Which number line represents the solution set to the inequality $4 - 4x \geq -4$?**

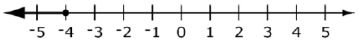
A 

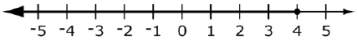
B 

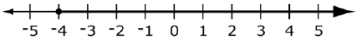
C 

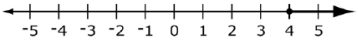
D 

94. **Which number line represents the solution set to the inequality $6 - 2x \geq 14$?**

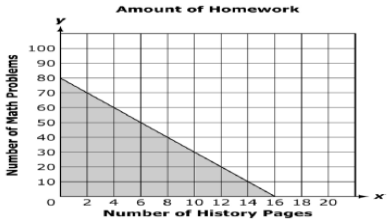
A 

B 

C 

D 

95. **Rebecca has at most 8 hours to work on her math homework and her history report. The graph shows different combinations of math problems and history report pages she can complete.**



Which of these combinations could Rebecca not complete in 8 hours?

A 2 history pages, 60 math problems
B 4 history pages, 20 math problems
C 8 history pages, 50 math problems
D 14 history pages, 10 math problems

96. **What values of x represent the solutions to the inequality $-2x + 4 < 8$?**

A $x < -4$

B $x > -4$

C $x < -2$

D $x > -2$

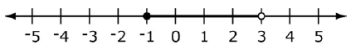
97. **Jorge cut a 40-inch rope into 3 pieces. The first piece is 18 inches long. The second piece is at least 9 inches long, but no greater than 15 inches long. Which inequality represents the length (x) of the third piece?**

A $7 \leq x \leq 13$

B $7 \leq x \leq 33$

C $13 \leq x \leq 27$

D $13 \leq x \leq 33$

98. 

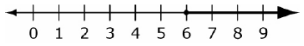
Which inequality is represented by this number line?

A $-1 < x \leq 3$

B $-1 \leq x < 3$

C $x \leq -1$ or $x > 3$

D $x < -1$ or $x \geq 3$

99. 

Which inequality is represented by this number line?

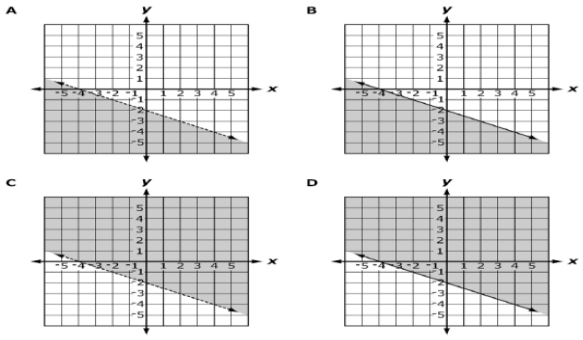
A $x - 6 \geq 0$

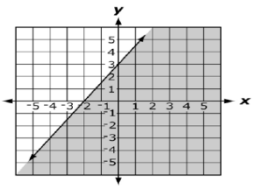
B $x - 6 \leq 0$

C $x + 6 \geq 0$

D $x + 6 \leq 0$

100. **Which graph represents the inequality $x + 2y > -4$?**



101. 

Which inequality is represented by this graph?

A $y \geq \frac{2}{3}x + 3$

B $y \leq \frac{2}{3}x + 3$

C $y \geq \frac{3}{2}x + 3$

D $y \leq \frac{3}{2}x + 3$

102. **Juan is three years older than Pedro. The sum of their ages is less than 27. Let x represent Pedro's age. Which inequality can be used to find the possibilities of Pedro's age?**

A $2x + 3 > 27$

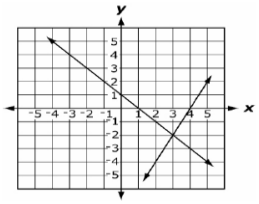
B $2x + 3 < 27$

C $2x + 3 \geq 27$

D $2x + 3 \leq 27$

Algebra I EOI Test review

103.



What is the solution to this graphed system of equations?

A (0, 1)

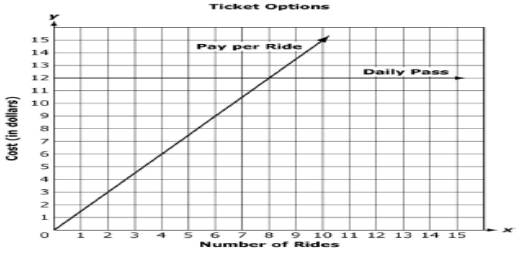
B (−2, 3)

C (3, −2)

D (4, 0)

104.

The graph shows two options to buy tickets for amusement park rides. Julie can pay $12 for a daily pass or she can pay $1.50 per ride.



For what number of rides is the cost of both options the same?

A 7 rides

B 8 rides

C 9 rides

D 12 rides

105.

$$\begin{cases} y = x + 2 \\ y = -x + 4 \end{cases}$$

What is the *y*-value of the solution to this system of equations?

A 1

B 3

C 4

D 6

106.

$$\begin{cases} x + y = 4 \\ 2x + 3y = -2 \end{cases}$$

What is the *x*-value of the solution to this system of equations?

A 2

B 6

C 10

D 14

107.

Hanna has $11.20 in a jar that contains only nickels and dimes. There are 140 coins in the jar. How many dimes are in Hanna's jar?

A 28 dimes

B 42 dimes

C 56 dimes

D 84 dimes

108.

Matt starts with $15 and saves $10 a week. At the same time, Julie starts with $45 and saves $5 a week. In how many weeks will they have the same amount of money?

A 2 weeks

B 4 weeks

C 6 weeks

D 8 weeks

109.

The stem-and-leaf graph shows the noontime temperatures over a one-month period in Norman, Oklahoma.

Noontime Temperatures

Stem	Leaf
6	8 8
7	2 2 3 3 6 6 7 7 8 8 9 9 9 9
8	0 2 2 5 8 8 8 9
9	0 0 0 1 1 4 9

Key

8 | 3 = 83

Which of these is not an advantage of presenting the data in a stem-and-leaf graph?

A The shape of the data is apparent.

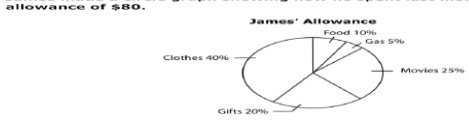
B It is easy to find the mode of the data.

C The temperatures are organized from least to greatest.

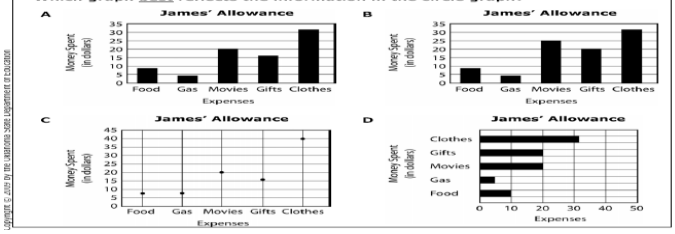
D It is easy to determine which day of the month had the greatest temperature.

110.

James made a circle graph showing how he spent last month's allowance of $80.



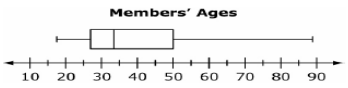
Which graph best reflects the information in the circle graph?



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111

The box-and-whisker plot below summarizes the ages of the members of a health club.



What information is conveyed on this box-and-whisker plot that is not conveyed by a bar graph of the same data?

A the mean age of the members

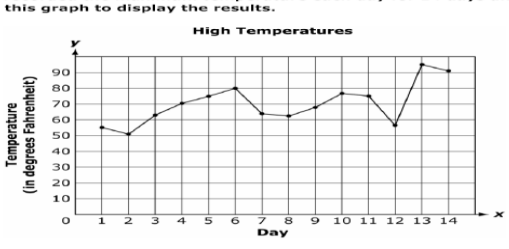
B the median age of the members

C the most common age of the members

D the number of members of the health club

112.

Brian recorded the maximum temperature each day for 14 days and made this graph to display the results.



Between which two days did the maximum temperature change the most?

A Day 2 and Day 3

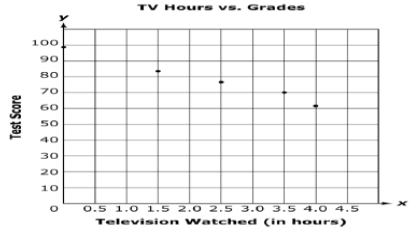
B Day 6 and Day 7

C Day 11 and Day 12

D Day 12 and Day 13

Algebra I EOI Test review

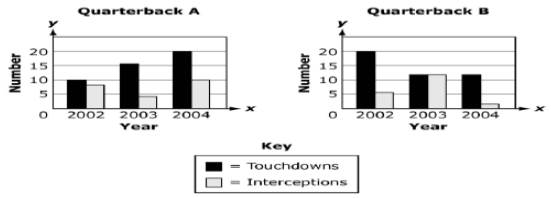
113. Jane recorded the scores she received on tests compared with the number of hours she watched television on the nights before the tests.



Jane is planning to watch a 2-hour television movie the night before her algebra test. According to the data, what would be the best prediction for Jane's test score?

A 75
B 80
C 85
D 90

114. The graphs shown compare two quarterbacks' performances over the same three years. Each graph compares the number of touchdowns and the number of interceptions.



Which quarterback in a particular year had the biggest difference between touchdowns and interceptions?

A quarterback A; 2004
B quarterback B; 2004
C quarterback A; 2003
D quarterback B; 2002

115. The table below shows the number of visitors to a theme park on each of the four Wednesdays in June.

Visitors to the Park

Date	Number of Visitors
July 5	1,971
July 12	2,060
July 19	1,980
July 26	2,177

The park manager wants to predict the total number of people who will visit the park on the five Wednesdays in July. Which of these is the best estimate?

A 6,000 visitors
B 8,000 visitors
C 10,000 visitors
D 14,000 visitors

116. The frequency table shows the prizes offered in a school raffle. There are 1,000 total tickets for the raffle.

Raffle Prizes

Prize	Number of Winning Tickets
$500	1
$20	9
$10	90
$5	400
Free movie ticket	500

A local business purchased 100 tickets. How many free movie tickets should the business expect to win?

A 10 movie tickets
B 20 movie tickets
C 50 movie tickets
D 100 movie tickets

117. Judy has test scores of 82, 75, and 78. What does she need to score on her next test so that she has an average test score of 80?

A 75
B 78
C 80
D 85

118. A bag contains 16 red checkers and 16 black checkers. Anne removes 1 black checker and 2 red checkers from the bag and does not replace them. She then reaches into the bag and selects a checker at random. What is the probability that the checker is red?

A $\frac{1}{2}$
B $\frac{14}{15}$
C $\frac{14}{29}$
D $\frac{15}{29}$

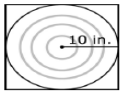
119. Of the first 80 customers to use a gumball machine, 25 received blue gumballs and 35 received yellow gumballs. Carlos purchases a gumball. Based on this information, what is the probability that his gumball is neither blue nor yellow?

A $\frac{1}{4}$
B $\frac{5}{7}$
C $\frac{7}{12}$
D $\frac{11}{16}$

120. Seven students had a long jump competition. Each student jumped a different length. Joan was one of the students in the competition. What is the probability that Joan's jump was greater than the median jump length?

A $\frac{1}{2}$
B $\frac{1}{3}$
C $\frac{3}{7}$
D $\frac{4}{7}$

121. Tom throws snowballs at a target his dad made for him. The target is a square board with a circle with a 10-inch radius drawn on it, as shown below. Tom manages to hit the board every time, but his shots are totally random.



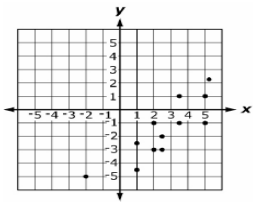
What is the approximate probability that his next shot that hits the target will hit outside the circle?

$A = \pi r^2$

A 0.22
B 0.30
C 0.70
D 0.79

Algebra I EOI Test review

122.



Which equation best represents the line of best fit for this scatter plot?

A $y = 4x - 4$

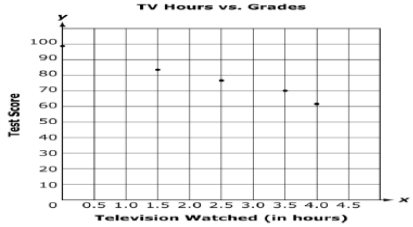
B $y = 4x - 2$

C $y = x - 4$

D $y = x - 2$

123.

Jane recorded the scores she received on tests compared with the number of hours she watched television on the nights before the tests.



What does the scatter plot imply about the relationship between her test scores and the number of hours of television she watched the night before the test?

A Jane's grades are going down.

B Jane will never watch more than four hours of television.

C Getting higher grades will cause Jane to watch less television.

D Jane's lower grades tend to follow nights where she watched more television.

124.

Tamara recorded the population of Medville for certain years in this table.

Medville Population

Year	1985	1990	1995	2000	2005
Population	1,512	1,698	1,607	1,791	1,924

She determined the line of best fit that models this data is $y = 18x + 1{,}520$, where x represents the number of years since 1985 and y represents the population. According to Tamara's model, what is the best prediction for the population of Medville in 1997?

A 1,680

B 1,700

C 1,736

D 1,797