Regents Practice Test 1

Integrated Algebra

***Part I**: Multiple Choice*

1. Expressed in simplest form, $\frac{12a^3c}{4ac}$ is equivalent to:

[1] $8a^2$ [2] $3a^2$ [3] $3a^3$ [4] $3a^3c$

2. Which trinomial is equivalent to $(3x - 2)(x + 4)$?

[1] $3x^2 + 10x + 8$ [3] $3x^2 + 10x - 8$

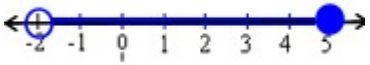
[2] $3x^2 - 10x - 8$ [4] $3x^2 - 10x + 8$

3. Which property is illustrated by the equation $(a + b) + c = c + (a + b)$?

[1] associative [3] distributive

[2] commutative [4] identity

4. Which interval notation is the set of all real numbers represented by this graph?

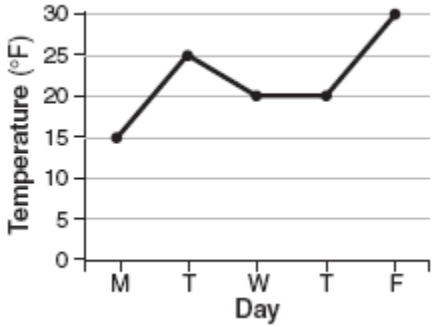


[1] (-2,5) [2] [-2,5) [3] (-2,5] [4] [-2,5]

5. What is the value of y in the equation $2(3y - 4) = 10$?

[1] 1 [2] $2\frac{1}{3}$ [3] 3 [4] $\frac{1}{3}$

6. The accompanying graph shows the high temperatures in Elmira, New York for a 5-day period in January.



Which statement describes the data?

[1] median = mode [3] mean < mode

[2] median = mean [4] mean = mode

7. What is the slope of the line containing the points (-9,2) and (3,14)?

[1] 1 [2] -1 [3] $-\frac{8}{3}$ [4] -2

8. What is the value of w in the equation $\frac{3}{4}w+8=\frac{1}{3}w-7$?

[1] 2.4 [2] -0.2 [3] -13.846 [4] -36

9. One of the roots of the equation $x^2 + 3x - 18 = 0$ is 3. What is the other root?

[1] 15 [2] 6 [3] -6 [4] -21

10. Which ordered pair is *not* in the solution set of $y > 2x + 1$?

[1] (1,4) [2] (1,6) [3] (3,8) [4] (2,5)

11. What is the sum of $5\sqrt{7}$ and $3\sqrt{28}$?

[1] $9\sqrt{7}$ [2] $11\sqrt{7}$ [3] $60\sqrt{7}$ [4] $8\sqrt{35}$

12. Given the equations $y = x^2 - 4x - 5$ and $y + x = -1$, one point that satisfies both equations is:

[1] (-2,1) [2] (4,-5) [3] (2,-9) [4] (5,0)

13. At Bison High School, there are 16 students in English Club, 16 students in Science Club and 20 students in Math Club. Of these students, there are 5 students in both the English and Science Clubs; 6 students in both the Science and Math Clubs; and 8 in both the English and Math Clubs. If only 2 students are in all three clubs, how many students are in at least one of the clubs?

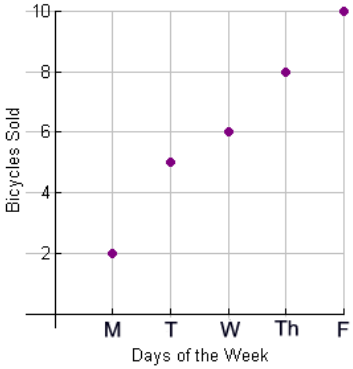
[1] 52 [2] 35 [3] 30 [4] 20

14. In a cup there are 4 quarters, 5 dimes, 6 nickels and 10 pennies. If one coin is selected at random, what is the probability that the coin has a letter "*n*" in its name?

[1] $\frac{6}{25}$ [2] $\frac{2}{4}$ [3] $\frac{9}{16}$ [4] $\frac{16}{25}$

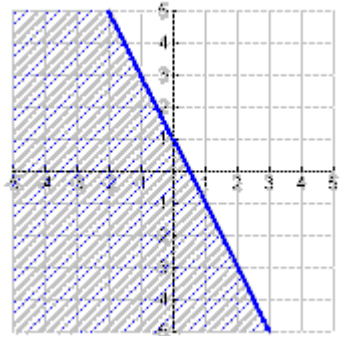
15. In the scatter plot shown at the right, which statement best describes the correlation between the days of the week and the number of bicycles sold?

[1] high negative correlation
[2] low negative correlation
[3] high positive correlation
[4] low positive correlation



16. Which graph indicates correctly the graph of the inequality $y \geq -2x + 1$?

[1]



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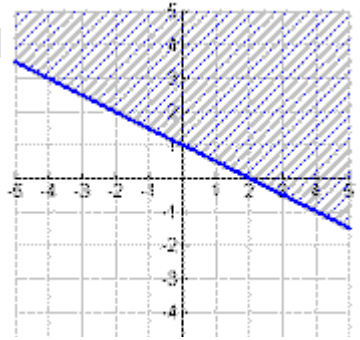

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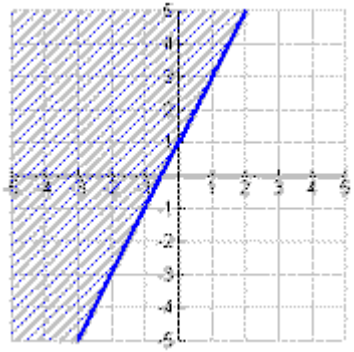

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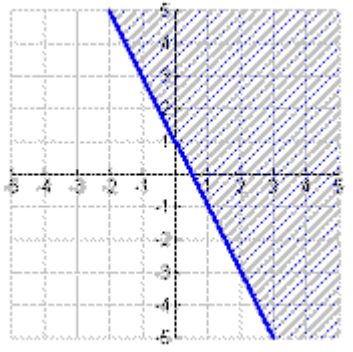
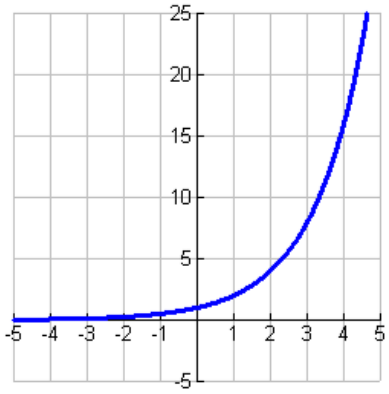


17. Which type of graph is shown in the diagram?

[1] absolute value
[2] exponential
[3] linear
[4] quadratic



18. The expression $\frac{3x}{4} - \frac{x}{3}$ is equivalent to

[1] $\frac{14x}{7}$ [2] $\frac{14x}{12}$ [3] $\frac{5x}{7}$ [4] $\frac{5x}{12}$

19. For which value of x is $\frac{x-2}{x^2+3x+2}$ undefined?

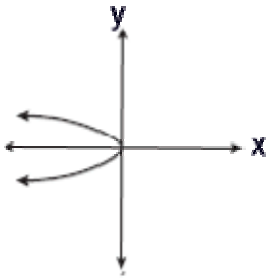
[1] 1 [2] 2 [3] -2 [4] 4

20. The height, h, of a cylinder is 3 units less than 4 times its radius, r. Which expression represents the height of the cylinder in terms of its radius?

[1] $4r + 3$ [2] $3 - 4r$ [3] $4r - 3h$ [4] $4r - 3$

21. Which graph represents a function?

[1]



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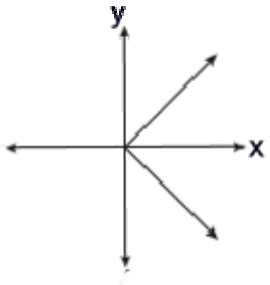

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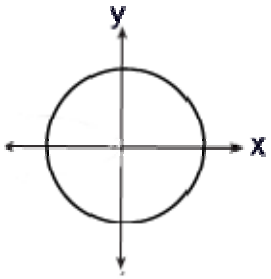
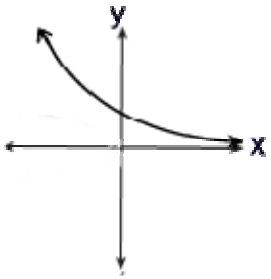


[4]



22. The length of a rectangular garden is 3 yards more than its width. If the area of the garden is 36 square yards, which equation could be used to find the dimensions of the garden?

[1] $x^2 + 3x + 36 = 0$
[2] $x^2 - 3x + 36 = 0$
[3] $x^2 - 3x - 36 = 0$
[4] $x^2 + 3x - 36 = 0$

23. Which expression represents the product of 6.5×10^4 and 2.4×10^3 ?

[1] 15.6×10^8
[2] 8.9×10^7
[3] 1.56×10^{12}
[4] 1.56×10^8

24. An LCD panel is used for a computer monitor. When rounded to the *nearest inch*, the length of the monitor is 16 inches and the width is 12 inches. Which of these **cannot** be the area of the monitor?

[1] 174 sq. in
[2] 186 sq. in.
[3] 192 sq. in.
[4] 204 sq. in.

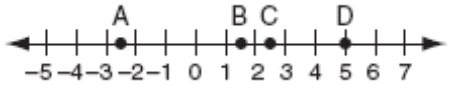
25. Trina has a college fund started with a deposit of $10,000 which earns 5% annually. If no other monies are deposited, how much money will Trina have in her fund at the end of three years?

[1] $11,500
[2] $11,576.25
[3] $15,000
[4] $25,000

26. A company is designing a cylinder to hold marbles for a new game it is inventing. The cylinder has a height of 18 inches and a diameter of 6 inches. Find the volume of the cylinder to the *nearest tenth* of a cubic inch.

[1] 108.0 [2] 508.9 [3] 678.6 [4] 1065.92

27. Which point on the accompanying number line best represents the position of $\sqrt{5}$?



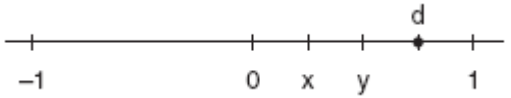
[1] **A** [2] **B** [3] **C** [4] **D**

28. Given the following system of equations, find the value for x in the solution.

$5x - 4y = 28$
$3x + y = 44$

[1] 8 [2] 4 [3] 12 [4] 9

29. Let x and y be numbers such that $0 < x < y < 1$, and let $d = x - y$. Which graph could represent the location of d on the number line?

[1]


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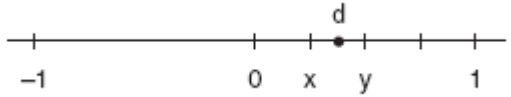

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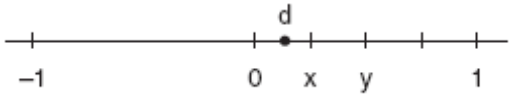

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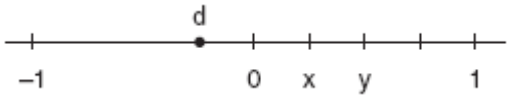
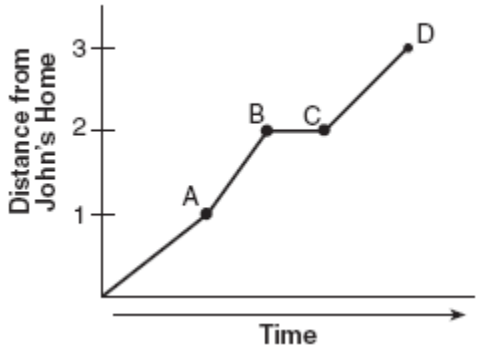


30. John left his home and walked 3 blocks to his school, as shown in the accompanying graph. What is one possible interpretation of the section of the graph from point *B* to point *C*?



[1] John arrived at school and stayed throughout the day.
[2] John waited before crossing a busy street.
[3] John returned home to get his mathematics homework.
[4] John reached the top of a hill and began walking on level ground.