Algebra 1B Practice Fall Semester Final Exam

Multiple Choice: *Identify the choice that best completes the statement or answers the question.*

Answer the following questions

____ 1. What are the mean, median, and mode(s) of the data? 3, 18, 27, 28, 15, 5, 13, 27, 27, 7

____ 2. Jake's test scores for the first term of chemistry class were 76, 66, 71, 92, and 60. Which of the measures of central tendency or dispersion would make Jake's test scores seem as high as possible?
a. mean b. median c. mode d. range

____ 3. Thirteen golfers were asked what their score was on their last game. The scores are shown below.
89, 78, 75, 88, 81, 91, 77, 77, 86, 88, 80, 60, 80
Find the range and the outlier(s), if any, of the golfers' scores.

____ 4. Draw a box-and-whisker plot of the data. 42, 39, 31, 38, 43, 41, 35

____ 5. Draw a box-and-whisker plot that correctly displays data about the ages of team members on a company baseball team. The statements below are all true about the team. Use the statements to correctly choose the box-and-whisker plot.
· The youngest member is 23 years old.
· About 75% of the members are between 31 and 39 years old.
· No one is older than 39 years old.
· About 50% of the members are at least 29 years old.

For #6 and 7, use the following information.
The number of seats in each row of a theater form an arithmetic sequence, as shown in the table.

Row	1	2	3	4
Number of Seats	7	16	25	34

____ 6. Which formula can be used to find the number of seats in any given row?

____ 7. How many seats are in the 15th row?

For #8 and 9, use the relation shown in the table.

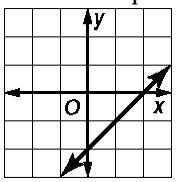
x	*y*
1	7
2	10
3	13
4	16
5	19

____ 8. Which equation describes this relationship?

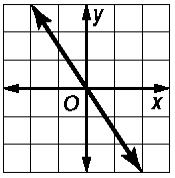
____ 9. What is the value of *y* when $x = 38$?

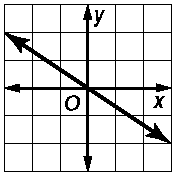
____ 10. Find the next two numbers of the sequence 4, 7, 6, 9, 8, 11, 10, … .

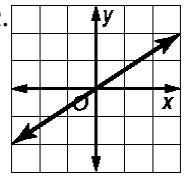
____ 11. Write an equation for the relation shown in the picture.

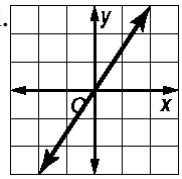


____ 12. Which is the graph of $y = \frac{2}{3}x$?

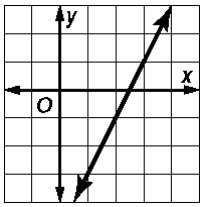
a. 

b. 

c. 

d. 

____ 13. Which equation is graphed below?



a. $2y + x = -5$
b. $2x - y = 5$
c. $2x + y = -5$
d. $2y - x = 10$

____ 14. Which equation has a graph that is a vertical line?

a. $y + 7 = 10$
b. $3x = y$
c. $x - y = 0$
d. $5x - 3 = 0$

____ 15. Which equation is *not* a linear equation?

a. $x = -7$
b. $-3v + 5w = 9$
c. $y=2x^2$
d. $y=4x$

____ 16. What is the slope of the line through (2, 7) and (–9, 13)?

____ 17. What is the slope of the line through (–7, 8) and (3, 8)?

____ 18. What is the slope of the line through (12, -9) and (12, 4)?

____ 19. What is the slope-intercept form of the equation of a line with a slope of 9 and a *y*-intercept of –2?

____ 20. Which is an equation of the line with slope –12 and a *y*-intercept of 8?

____ 21. Which is an equation of the line that passes through (5, –2) and (7, 8)?

____ 22. What is the equation of the line through (–5, –9) with a slope of 0?

____ 23. The cost of a school banquet is $85 plus $20 for each person attending. Write an equation that gives total cost as a function of the number of people attending. What is the cost for 75 people?

____ 24. Erik pays $300 in advance on his account at the athletic club. Each time he uses the club, $12 is deducted from the account. Write an equation that represents the value remaining in his account after *x* visits to the club. Find the value remaining in the account after 9 visits.

____ 25. Write an algebraic expression for *five-fourths of the square of a number*.

____ 26. Translate the following sentence into an equation.
The sum of twice a number x and 12 is three less than four times x.

____ 27. Nine is subtracted from a number. The result is divided by three. This result is added to 11 to give 40. What is the number?

____ 28. Write a verbal expression for $3n + 8$.

____ 29. Evaluate $9 + 8 \bullet 4 - 2$.

____ 30. Evaluate $3(14 - 6) + 12 \div 4$.

____ 31. Evaluate $a^2 + abc$ if $a = 4$, $b = 6$, and $c = 9$.

____ 32. Evaluate $32 \bullet 2 + 3(15 \div 5 - 3)$.

____ 33. Simplify $m^2 - 4m^3 + 5m^2$.

____ 34. Simplify $4(3v + 7w - w)$.

____ 35. Simplify $5(x + 6y) + 4(7x + y)$.

____ 36. Solve $p - (-3) = 9$.

____ 37. Solve $q - 25 = 18$.

____ 38. Solve $3v = -63$.

____ 39. Solve $-\frac{n}{4} = -5$.

____ 40. Solve $-\frac{2}{3}d = -12$.

____ 41. Solve $4h + 7 = 39$.

____ 42. Solve $4r + 14 = 10r + 32$.

____ 43. Solve $\frac{3}{8}(24n+64)=2n + 8(n+3) - n$.

____ 44. Solve $-5(e - 9) = 3(4e + 7)$.

____ 45. Solve $3f - g = g$ for g.

____ 46. If $y = 4x^2 - 3x + 2$, what is the value when $x=-6$?

____ 47. Simplify $(3j^7)(-7j^2)$.

____ 48. Simplify $(a^5)^6$.

____ 49. Simplify $\frac{b^{11}}{b^6}$. Assume the denominator is not equal to zero.

____ 50. Simplify $\frac{25m^6n^4}{5\,m^{-2}m^9}$. Assume the denominator is not equal to zero.

____ 51. Simplify $\frac{(7r^6t^9)^3}{(r^3t^{-2})^5}$. Assume the denominator is not equal to zero.

____ 52. Find the degree of the polynomial $5ab - 12a^4b^5 + a^9b$.

____ 53. Arrange the terms of $3x^4y^3 - 5xy^2 + 4x^6 + 2y$ so that the powers of x are in descending order.

____ 54. Find $(8t^2 + 6t – 5) – (t^2 – 3t + 1)$.

Find the sum.

____ 55. $(5y^4 + 3y^9 + 5) + (–9y^9 + 12 + 8y^4)$.

In #56-59, find the product.

____ 56. $(3x + 2)(3x – 1)$

____ 57. $(x + 3)(x^2 – 3x + 4)$

____ 58. $(7x^2 – 3)^2$

____ 59. $(3k + 1)(3k – 1)$

In #60-63, factor the polynomial.

____ 60. $x^2 + 4x + 3$

____ 61. $12x^2 – 16x – 16$

____ 62. $36x^2 – 25$

____ 63. $9x^2 + 49$

In #64-65, solve the equation

____ 64. $2x^2 + 9x – 5 = 0$

____ 65. $x^2 + 5x – 6 = 0$