

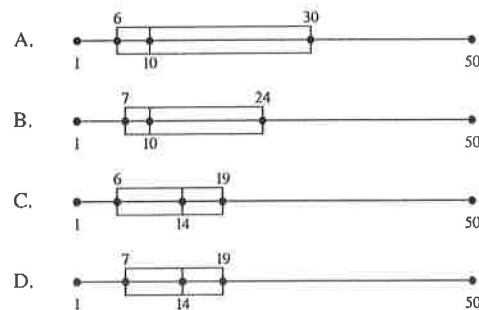
Name: _____

Date: _____

- Maria is twice as old as Sue. If x represents Sue's age, which expression represents how old Maria will be in three years?
 - $2x$
 - $x + 3$
 - $\frac{1}{2}x - 3$
 - $2x + 3$
- Using the letter n to represent a number, express "four less than twice this number" in terms of n .
- Tickets for a music concert were purchased at the rate of 500 tickets in 20 minutes. At this rate, how many tickets were purchased in m minutes?
 - $\frac{1}{25}m$
 - $25m$
 - $50m$
 - $500m$
- The length of a rectangular room is 7 less than three times the width, w , of the room. Which expression represents the area of the room?
 - $3w - 4$
 - $3w - 7$
 - $3w^2 - 4w$
 - $3w^2 - 7w$
- Which verbal expression can be represented by $2(x - 5)$?
 - 5 less than 2 times x
 - 2 multiplied by x less than 5
 - twice the difference of x and 5
 - the product of 2 and x , decreased by 5
- Which expression represents "5 less than twice x "?
 - $2x - 5$
 - $5 - 2x$
 - $2(5 - x)$
 - $2(x - 5)$
- Express the product $(2x - 3)(x + 5)$ as a trinomial.
- Which expression is equivalent to the expression $(2x + 4)(x - 6)$?
 - $2x^2 - 24$
 - $2x^2 - 8x - 24$
 - $x^2 - 4x - 12$
 - $2x^2 + 4x - 24$
- Factor: $x^2 + 6x + 8$
- Factor: $x^2 - 16$
- Factor: $x^2 + 5x$
- The expression $3x^2 - 7x + 2$ is equivalent to
 - $(3x + 2)(x + 1)$
 - $(3x + 1)(x + 2)$
 - $(3x - 2)(x - 1)$
 - $(3x - 1)(x - 2)$
- Which expression is equivalent to $x^2 + 7x + 6$?
 - $(x + 6)(x + 1)$
 - $(x + 3)(x + 2)$
 - $(x + 1)(x + 7)$
 - $x(x + 7)$
- Solve for x : $5x + 7 = 2x - 2$
- What is the value of x in the equation $4(2x + 1) = 27 + 3(2x - 5)$?
 - 21
 - 9
 - $7\frac{1}{2}$
 - 4
- Solve for x : $15x - 3(3x + 4) = 6$
 - 1
 - $-\frac{1}{2}$
 - 3
 - $\frac{1}{3}$
- What is the value of x in the equation $5(2x - 7) = 15x - 10$?
 - 1
 - 0.6
 - 5
 - 9
- The solution set of the equation $x^2 - 4x = 0$ is
 - $\{0, 4\}$
 - $\{4, -4\}$
 - $\{-4\}$
 - $\{4\}$
- The solution set of $x^2 - 64 = 0$ is
 - $\{8, -8\}$
 - $\{-8\}$
 - $\{8\}$
 - $\{16, -4\}$
- What is the solution set of the equation $x^2 - 3x - 10 = 0$?
 - $(5, -2)$
 - $(-5, -2)$
 - $(5, 2)$
 - $(-5, 2)$
- What is the solutions set of the equation $2x^2 + x - 3 = 0$?
 - $\{\frac{1}{2}, -3\}$
 - $\{-\frac{3}{2}, 1\}$
 - $\{-\frac{1}{2}, -3\}$
 - $\{\frac{3}{2}, 1\}$
- The inequality $3x + 2 > x + 8$ is equivalent to
 - $x > -\frac{3}{2}$
 - $x > \frac{3}{2}$
 - $x > 3$
 - $x < 3$

23. The expression $5 \leq x - 2$ is equivalent to
- A. $x \leq 7$ B. $x \geq 7$ C. $x \geq 3$ D. $x \geq \frac{5}{2}$
24. Which inequality is equivalent to $2x - 1 > 5$?
- A. $x > 6$ B. $x > 2$ C. $x < 3$ D. $x > 3$
25. Which value of x is in the solution set of $-3x + 8 \geq 14$?
- A. -3 B. -1 C. 0 D. 3
26. Solve the inequality $-5(x - 7) < 15$ algebraically for x .
27. Solve the following system of equations for x :
- $$\begin{aligned} x + y &= 6 \\ x - y &= 2 \end{aligned}$$
28. Solve the following system of equations for x :
- $$\begin{aligned} y &= 2x - 5 \\ x + y &= 4 \end{aligned}$$
29. Which ordered pair is the solution to this system of equations?
- $$\begin{aligned} y &= x + 4 \\ x + y &= 2 \end{aligned}$$
- A. $(1, 5)$ B. $(0, 2)$ C. $(-1, 3)$ D. $(-4, 0)$
30. Solve the following system of equations for x :
- $$\begin{aligned} 2x + y &= 6 \\ 3x - y &= 4 \end{aligned}$$
31. On a standardized test with normal distribution, the mean is 80 and the standard deviation is 4. If 1,500 students took the test, approximately how many students are expected to score between 76 and 84?
- A. 510 B. 1485 C. 750 D. 1020
32. The heights of a group of 1,000 women are normally distributed. The mean height of the group is 170 cm with a standard deviation of 10 cm. What is the best approximation of the number of women between 180 cm and 190 cm tall?
- A. 125 B. 135 C. 340 D. 170
33. To identify the most popular sport of people who live in a city, interviews are conducted with fans leaving a stadium after a hockey game. Identify the type of sampling method used.
- A. sequence sampling B. clustered sampling
C. stratified sampling D. systematic sampling

34. A club has 20 male and 80 female members. If a committee of 20 is being formed by random selection, what is the best method of sampling to use to ensure that there is a proportional representation of males and females in the club.
- A. simple random sample B. systematic sample
C. stratified random sample D. self-selective sample
35. A computer chip manufacturer evaluates product quality by testing every twentieth computer chip produced daily. Identify the type of sampling method used.
- A. sequence sampling B. clustered sampling
C. self-selective sampling D. systematic sampling
36. To collect data about the kinds of pets people own, Rebecca interviews everyone who brings their pet to a local Animal Hospital. What type of sample does this represent?
- A. a stratified sample B. a clustered sample
C. a self-selective sample D. a convenience sample
37. Which is the correct box-and-whisker plot for the following data:
1, 6, 8, 10, 18, 30, 50



38. The box-and-whisker plots show the Test Scores of five schools that have written a common exam.
- At which school are the median and high scores closest?
- Sunrise
Valley
Franklin
Clinton
Oliver
-
- A. Sunrise B. Valley C. Clinton D. Oliver
39. If $y = -2x^2 + 8x - 5$ were put in vertex form $y = a(x - h)^2 + k$, then $k = ?$
- A. -13 B. -3 C. 3 D. 1

40. Determine the vertex of the parabola $y = 5 - 6x - 3x^2$.
- A. $(-1, -8)$ B. $(-1, 8)$ C. $(1, -8)$ D. $(1, 8)$
41. Translate into an equation.
- An ice cube with a surface area of 60 in^2 is placed in the sun. As it melts, it loses 15% of its surface area each minute. Let y be the surface area of the ice cube x minutes after it is placed in the sun.
- A. $y = 60(1 + 0.15)^x$ B. $y = 60(1 - 0.15)^x$
 C. $x = 60(1 - 0.15)^y$ D. $y = x(1 - 0.15)^{60}$
42. Translate into an equation.
- A couple has a 400 acre farm that they want to leave to their future grandchildren. They decide to give each grandchild 12% of the land remaining when the child is born. Let y be the amount of land remaining after x grandchildren are born.
- A. $x = 12(1 + 0.4)^y$ B. $x = 400(1 - 0.12)^y$
 C. $y = 400(1 - 0.12)^x$ D. $y = 400(1 + 0.12)^x$
43. The length of a rectangle is 12 more than the width. The area is 325. Which equation best represents the situation if W represents the width of the rectangle?
- A. $w^2 + 325w + 12 = 0$ B. $w^2 - 12w - 325 = 0$
 C. $w^2 + 12w - 325 = 0$ D. $w^2 - 325w + 12 = 0$
44. What is the area of a floor whose length is 4 feet longer than its width?
- A. $A = 2(2W + 4)$ B. $A = W^2 + 4W$
 C. $A = 4W^2$ D. $A = 5W^2$
45. Sara bought 5 fish. Every month the number of fish she has doubles. After m months, she will have F fish, where
- $$F = 5 \cdot 2^m$$
- How many fish will Sara have after 3 months if she keeps all of them and the fish stay healthy?
- A. 13 B. 40 C. 375 D. 1000

46. The fish in Lake Ray Robert increase in population by the formula

$$P = B \left(\frac{3}{2}\right)^t$$

where P is the current population, B is the beginning population and t is the number of years that have passed. If the lake was stocked in 1990 with 1000 fish, about how many fish populated the lake in 1998?

- A. 11,391 B. 14,322 C. 21,057 D. 25,629
47. The values in the table below were generated using a rule.

x	y
0	23
1	30
2	37
3	44
4	51
5	58

Which rule could have been used to generate the values in the table?

- A. $y = 7x + 23$ B. $y = 23x$
 C. $y = x + 23$ D. $y = 7 + 23x$
48. In 1997 the population of a small town was 700. If the annual rate of increase is about 0.8%, which value below expresses the population five years later?
- A. $5(700)(0.008)$ B. $5(700)(1.008)$
 C. $(700)(0.008)^5$ D. $(700)(1.008)^5$
49. A \$2,000 bicycle depreciates at a rate of 10% per year. After how many years will it be worth less than \$1,000?
- A. 5 years B. 7 years C. 10 years D. 100 years
50. The student population in the Greenville school system is increasing about 10% each year. This year there are 3120 students in the Greenville school system. If this trend continues, which of the following is closest to the number of students who will be in this school system 3 years from now?
- A. 3400 B. 4000 C. 4200 D. 9400

51. When interest is compounded n times a year, the accumulated amount (A) after t years is given by the formula

$$A = P \left(1 + \frac{r}{n} \right)^{nt}$$

where P is the initial principal and r is the annual rate of interest. *Approximately* how long will it take \$2,000 to double at an annual interest rate of 5.25% compounded monthly?

- A. 13.98 years B. 13.71 years
C. 13.23 years D. 13.08 years
52. Teresa saw the following advertisement in her local newspaper.

avocados—2 for \$1.50
ripe and delicious!
(limit 100 per family)

What would be the cost of 7 avocados?

- A. \$5.25 B. \$4.75 C. \$4.25 D. \$3.75

53. The table shows the amounts earned from selling copies of four recipe books.

Book Title	Copies Sold	Amount
Quick Desserts	50	\$300.00
Lean Meals	35	\$175.00
Master the Grill	40	\$160.00
Easy Appetizers	10	\$20.00

According to the data, which recipe book costs the *most*?

- A. Master the Grill B. Easy Appetizers
C. Quick Desserts D. Lean Meals

54. Consider the following sets of data:

A: {15, 24, 31, 31, 31, 42}

B: {92, 96, 102, 113}

C: {11, 17, 21, 21, 33}

D: {25, 37, 44}

Which set has the greatest mode?

- A. Set A B. Set B C. Set C D. Set D

55. Which set of numbers has an average of 11?

A. {3, 8, 15, 18}

B. {5, 6, 16, 18}

C. {5, 7, 18, 19}

D. {11, 11, 11, 16}

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| <p>1.
Answer: D</p> <p>2.
Answer: $2n - 4$</p> <p>3.
Answer: B</p> <p>4.
Answer: D</p> <p>5.
Answer: C</p> <p>6.
Answer: A</p> <p>7.
Answer: $2x^2 + 7x - 15$</p> <p>8.
Answer: B</p> <p>9.
Answer: $(x + 4)(x + 2)$</p> <p>10.
Answer: $(x + 4)(x - 4)$</p> <p>11.
Answer: $x(x + 5)$</p> <p>12.
Answer: D</p> <p>13.
Answer: A</p> <p>14.
Answer: -3</p> <p>15.
Answer: D</p> <p>16.
Answer: C</p> <p>17.
Answer: C</p> <p>18.
Answer: A</p> <p>19.
Answer: A</p> <p>20.
Answer: A</p> | <p>21.
Answer: B</p> <p>22.
Answer: C</p> <p>23.
Answer: B</p> <p>24.
Answer: D</p> <p>25.
Answer: A</p> <p>26.
Answer: $x > 4$, and appropriate algebraic work is shown.</p> <p>27.
Answer: 4</p> <p>28.
Answer: 3</p> <p>29.
Answer: C</p> <p>30.
Answer: 2</p> <p>31.
Answer: D
Objective: AII.11</p> <p>32.
Answer: B
Objective: AII.11</p> <p>33.
Answer: B
Objective: PS.9</p> <p>34.
Answer: C
Objective: PS.9</p> <p>35.
Answer: D
Objective: PS.9</p> <p>36.
Answer: D
Objective: PS.9</p> |
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37.
Answer: B
Objective: A.10

38.
Answer: A
Objective: A.10

39.
Answer: C
Objective: L.04D

40.
Answer: B
Objective: L.04D

41.
Answer: B
Objective: L.05B

42.
Answer: C
Objective: L.05B

43.
Answer: C
Objective: A.06C

44.
Answer: B
Objective: A.06C

45.
Answer: B
Objective: A.09B

46.
Answer: D
Objective: A.09B

47.
Answer: A

48.
Answer: D

49.
Answer: B

50.
Answer: C

51.
Answer: C

52.
Answer: A
Objective: 7.04B

53.
Answer: C
Objective: 7.04B

54.
Answer: A
Objective: 7.5.3

55.
Answer: A
Objective: 7.5.3