

Answer questions 1-35 on your Scantron.

Questions 1-30 will be scored for the Power Bowl event. In the event of a tie, questions 31-35 will be used as the tiebreaker.

1. Tom has 3 jars, each containing either 10 or 20 marbles. Which of the following could NOT be the total number of marbles in the jars?

a. 30 b. 40 c. 50 d. 60 e. 70

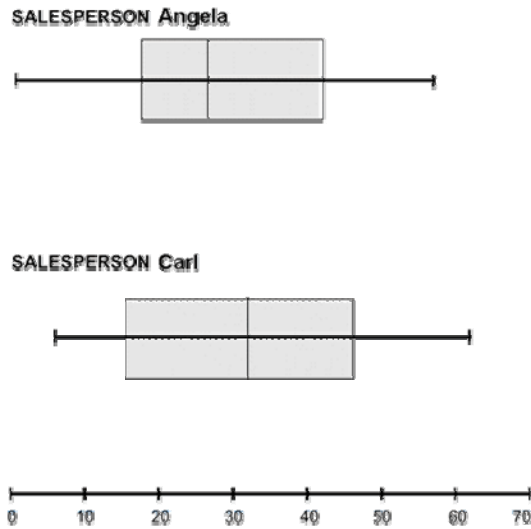
2. Dick and Jane each earn \$5 an hour at part time jobs. If on a certain day Dick works $1\frac{1}{2}$ hours and Jane works $2\frac{3}{4}$ hours, what is the total amount of their earnings that day?

a. \$25.00 b. \$21.25 c. \$18.33 d. \$15.00 e. NG

3. A fair coin is to be tossed three times. What is the probability that 2 heads and 1 tail in any order will come up?

a. $\frac{1}{4}$ b. $\frac{2}{3}$ c. $\frac{3}{8}$ d. $\frac{1}{8}$ e. NG

4. The following box and whisker plots show the number of computers Angela and Carl have sold each month for the last 5 years. Which of the following statements is not true?

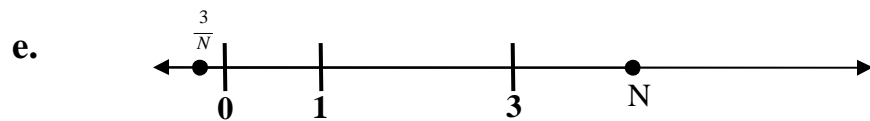
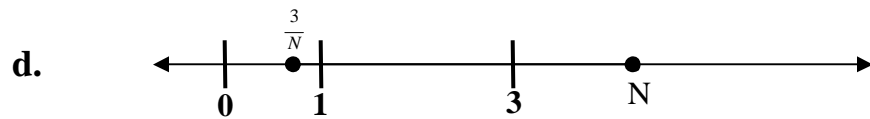
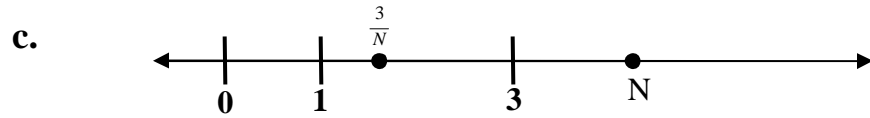
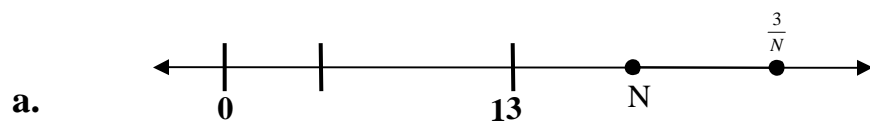


- a. Angela's lower quartile is less than Carl's.
 b. Angela's median is less than Carl's.
 c. Angela's upper quartile is less than Carl's.
 d. Angela's interquartile range is less than Carl's.
 e. NG
5. If $3x + y = 21$, and $x = 4$, what is the value of y ?
- a. 7 b. 13 c. 9 d. 33 e. NG
6. A strain of bacteria doubles the number of organisms present each day. If on the first day of observation, a bacterium colony has 2 bacteria present, about how many will be present on the 10th day?
- a. 20 b. 40 c. 1000 d. 2000 e. 4000

7. How many square units are in the area bounded by $x + y = 5$, the x -axis, and the y -axis?

- a. 5 sq. units b. 10 sq. units c. 25 sq. units d. $12\frac{1}{2}$ sq. units e. NG

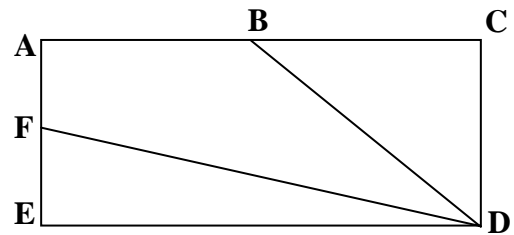
8. A number N is greater than 3. Which of the following best represents the location of $\frac{3}{N}$ on the number line?



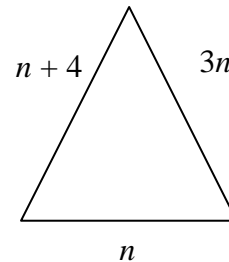
9. If $\sqrt{a} = 9$, then $a =$

- a. 3 b. 4.5 c. 18 d. 81 e. NG

10. The rectangle shown has length $AC = 32$ cm, width $AE = 20$ cm and B and F are midpoints of \overline{AC} and \overline{AE} , respectively. The area of the quadrilateral ABDF is?



- a. 320 cm^2 b. 325 cm^2 c. 330 cm^2 d. 335 cm^2 e. 340 cm^2
11. What type of triangle is the figure at the right when $n = 2$?
(drawing is not to scale)



- a. equilateral b. scalene c. isosceles d. right e. obtuse
12. Find the sum of all values of x such that $|x - 1| = 7$.
- a. 8 b. 6 c. 0 d. 2 e. NG
13. Mr. Bee receives a 10% raise every year. His salary after four such raises has gone up by what percent?
- a. less than 40% b. 40% c. 44% d. 45% e. more than 45%
14. Simplify $\sqrt{64x^{16}}$
- a. $32x^4$ b. $32x^8$ c. $8x^4$ d. $8x^8$ e. NG

15. A set of marbles can be divided in equal shares among 2, 3, 4, 5, or 6 children with no marbles left over. What is the least number of marbles that the set could have?
- a. 20 b. 30 c. 36 d. 60 e. NG
16. Which of the following is NOT a solution of $y = 5x + 1$?
- a. (0, 1) b. (1, 6) c. (21, 4) d. (22, 111) e. (7, 36)
17. The slope of the line passing through the points (-2,1) and (2,-1) is:
- a. -2 b. -1 c. $-\frac{1}{2}$ d. $\frac{1}{2}$ e. 1
18. How many feet per second does a car travel when it goes at a speed (or rate) of 60 miles per hour? (1 mile = 5,280 feet)
- a. 316,800 feet per second b. 5,280 feet per second
- c. 3,600 feet per second d. 88 feet per second e. NG
19. In what order must you perform the operations to correctly evaluate this expression? $10 + 4(5 - 12 \div 6)$
- a. $-, \times, \div, +$ b. $+, -, \times, \div$ c. $\div, \times, +, -$ d. $\div, -, \times, +$ e. $-, \div, +, \times$

20. There are 15 girls and 11 boys in a mathematics class. If a student is selected at random to run an errand, what is the probability that a boy will be selected?

- a. $\frac{4}{26}$ b. $\frac{11}{26}$ c. $\frac{11}{15}$ d. $\frac{15}{11}$ e. NG

21. Find the rule for the for the question mark

Input	Output
n	?
4	6
6	12
9	21
12	30

- a. $n + 2$ b. $2n$ c. $3(n - 2)$ d. $2n - 2$ e. NG

22. The solution of $k + 3(k - 2) = 34$ is

- a. $k = 10$ b. $k = 9$ c. $k = 8$ d. $k = 7$ e. NG

23. The foot of a 13 ft ladder is 5 ft from the base of a wall. How high up the wall does the ladder reach?

- a. 8 ft b. 12 ft c. 13.9 ft d. 18 ft e. NG

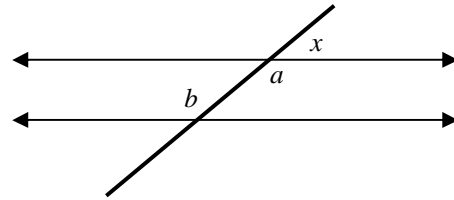
24. Mary is 12 years older than Bob. Four years ago she was four times as old as he was. How old is Mary now?
- a. 20 b. 16 c. 8 d. 4 e. NG
25. 10 dimes are initially lined up side by side. Every second dime is replaced by a nickel and then every third coin by a penny. What is the final value of the money?
- a. 53¢ b. 75¢ c. 67¢ d. 57¢ e. NG
26. Which number is equivalent to 2^{-5} ?
- a. $\frac{1}{10}$ b. $\frac{1}{32}$ c. $-\frac{1}{10}$ d. $-\frac{1}{32}$ e. NG
27. In which quadrant do the graphs of the equations $x + y = 1$ and $y + 11 = 3x$ intersect?
- a. I b. II c. III d. IV e. NG
28. If the price of a can of beans is raised from 50 cents to 60 cents, what is the percent increase in price?
- a. 10% b. 16.7% c. 20% d. 110% e. NG

29. The units (ones) digit of the product of any six consecutive whole numbers is what?

- a. 0 b. 2 c. 4 d. 6 e. 8

30. Given: 2 parallel lines cut by a transversal.

If $\angle x = 51^\circ$, find $\angle a + \angle b =$



- a. 258° b. 102° c. 180° d. 78° e. NG

31. Mr. Jacobs can correct 150 quizzes in 50 minutes. His student aide can correct 150 quizzes in 75 minutes. Working together, how many minutes will it take them to correct 150 quizzes?

- a. 30 b. 60 c. 63 d. 125 e. NG

32. Twelve people purchased supplies for a ten-day camping trip with the understanding that each of the twelve will get equal daily shares. They are then joined by three more people, but make no further purchases. How long will the supplies then last if the original daily share for each person is not changed?

- a. 10 days b. 9 days c. 8 days d. 7 days e. NG

33. Given: $2(x-1) - 3(x-3) < 6$. Solve for x .

- a.** $-17 < x$ **b.** $1 < x$ **c.** $x < 1$ **d.** $-7 < x$ **e.** $x < 17$

34. If $a = -1$, $b = 2$ and $c = -3$, then the value of $-(a^2b^0c^3)$ is:

- a.** -27 **b.** -9 **c.** 9 **d.** 18 **e.** NG

35. Solve: $x^2 + 5x - 6 = 0$

- a.** $x = 3$ or 2 **b.** $x = -3$ or 2 **c.** $x = 6$ or -1 **d.** $x = -6$ or 1 **e.** NG