

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. Subtract. $3\frac{5}{8} - 1\frac{2}{5} =$

- a. 3 b. $2\frac{5}{8}$ c. $2\frac{9}{40}$ d. $2\frac{1}{5}$ e. Not Given

2. Mr. Archer built a new shed on his farm. He had to cut four boards. They were $10\frac{1}{2}$ feet, $7\frac{3}{4}$ feet, $6\frac{1}{2}$ feet, and $5\frac{5}{6}$ feet. What was the total length of the four boards?

- a. $28\frac{9}{14}$ b. $29\frac{5}{6}$ c. $30\frac{7}{12}$ d. 31 e. Not Given

3. Suzette is twice as old as 4 year old Sylvia. Jodi is 2 years younger than her sister Suzette. The sum of the three sisters ages is one half their mom's age. How old is mom?

- a. 26 b. 28 c. 34 d. 36 e. Not Given

4. Find the number using the following clues.
The digit in the hundreds place is a square number and it is odd.
The digit in the tens place is 1 more than the square root of 16.
The digit in the hundredths place is 0.1 larger than $\frac{1}{10}$ of the digit in the hundreds place.
The digit in the thousandths place is equivalent to $\frac{30}{5}$.
The other digits are all 2s.
- a. 952.216 b. 372.126 c. 952.125 d. 742.216 e. Not Given
5. The Smiths' home was 1152 sq. ft. They added on a room that was 16 ft. by 18 ft. What was the percent of increase in their home?
- a. 25% b. 16% c. 18% d. 24% e. Not Given
6. What is the next number in the sequence 6, 9, 14, 21, 30, ...
- a. 43 b. 39 c. 47 d. 41 e. Not Given
7. If 14 pennies are 7% of a pile of pennies, how many pennies are in the pile?
- a. 98 b. 147 c. 200 d. 407 e. Not Given

8. Simplify: $3^3 + 3^2[2(5 - 3) + \sqrt{16}]$
- a. 225 b. 99 c. 75 d. 126 e. Not Given
9. Salina wants to earn \$23 this week. Her dad has agreed to pay her \$2.25 an hour to weed the garden and \$5.00 to mow the lawn. If she mows the lawn once, what is the least number of hours she will need to spend weeding the garden in order to make \$23.00?
- a. 10 hours b. 9 hours c. 6 hours d. 7 hours e. Not Given
10. Factor: $x^2 + 3x - 10$
- a. $(x - 2)(x + 5)$ b. $(x - 5)(x + 2)$ c. $x, -2, 5$ d. $x, -10, 3$ e. Not Given
11. Four runners represented Golden West, Mt. Whitney, El Diamante and Redwood high schools in a cross country race. The runner from Redwood was faster than the runner from El Diamante. The runner from Golden West beat the runner from Mt. Whitney, but lost to the runner from El Diamante. Which school's runner came in last?
- a. Mt. Whitney b. Golden West c. El Diamante d. Redwood e. Not Given

12. There are four tours at Mammoth Cave that the tourists can take. They are 2.4 km; $\frac{1}{2}$ km; 0.5 km; and 0.9 km. long. What is the average length of the tours?

- a. 5 km. b. 1.9 km. c. 2.4 km. d. 1.25 km. e. Not Given

13. Ben scored 30% of his team's 70 points in the basketball game. How many points did Ben make?

- a. 30 points b. 15 points c. 21 points d. 20 points e. Not Given

14. If you roll a regular six-sided die, what is the probability of getting a number that is not a prime number?

- a. 67% b. 25% c. 33% d. 50% e. Not Given

15. Which of the following is equivalent to 4^{-3} ?

a. $\frac{1}{4 \times 4 \times 4}$

b. $4 \times 4 \times 4$

c. $3 \times 3 \times 3 \times 3$

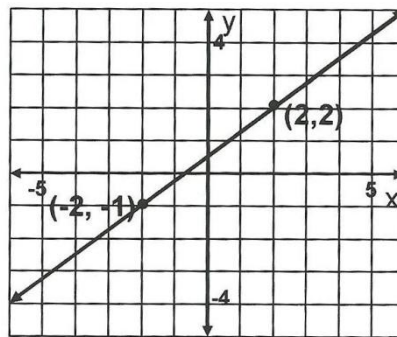
d. $\frac{1}{3 \times 3 \times 3 \times 3}$

e. Not Given

16. The checker championship was held in Beijing, China. For every nine games the Chinese won, the foreign teams won twenty-three. If the Chinese won forty-five, how many did the foreign teams win?

- a. 138 b. 6 c. 92 d. 115 e. Not Given

17. What is the equation of the line shown in the graph?



- a. $y = -\frac{3}{4}x + \frac{1}{2}$ b. $y = \frac{4}{3}x + \frac{1}{2}$ c. $y = \frac{3}{4}x - \frac{1}{2}$ d. $y = \frac{4}{3}x - \frac{1}{2}$ e. Not Given

18. How many integers satisfy both inequalities? $x + 3 > 5$ and $|x| \leq 5$.

- a. 1 b. 3 c. 5 d. 7 e. Not Given

19. Donald Duck can eat 2 pizzas in 3 minutes, while Goofy can eat 3 pizzas in 2 minutes. At these rates, how many pizzas can they eat together in one hour?
- a. 54 b. 96 c. 130 d. 216 e. 250
20. If $a + b = 11$ and $a - b = 3$, what is the value of $3a - 7b$?
- a. -37 b. -7 c. 14 d. 17 e. Not Given
21. The difference of two numbers is 8 and their product is 48, what is the sum of their squares?
- a. 480 b. 64 c. 104 d. 160 e. Not Given
22. On Monday Julie told a joke to 3 of her friends. On Tuesday, each of those friends told the joke to 3 other friends. One Wednesday, each person who heard the joke on Tuesday told 3 other people. If this pattern continues, how many people will hear the joke on Saturday?
- a. 243 people b. 18 people c. 729 people d. 2187 people e. Not Given

23. A motorist traveled 55 miles per hour for four hours and 65 miles per hour for the next six hours. What was her average speed in miles per hour for the entire trip?

- a. 58 mph b. 60 mph c. 61 mph d. 62 mph e. Not Given

24. Evaluate the expression below for $x = 4$ and $y = -\frac{1}{2}$.

$$(2x + 8y) - \left(6y - \frac{x}{2}\right)$$

- a. -1 b. 1 c. -9 d. 9 e. -2

25. Write 62 million in scientific notation.

- a. 62×10^6 b. 6.2×10^6 c. 6.2×10^{-6} d. 6.2×10^7 e. Not Given

26. Given the line $y = \frac{7}{2}x + 1729$. What is the slope of the line perpendicular to the given line?

- a. $\frac{7}{2}$ b. $\frac{2}{7}$ c. $-\frac{7}{2}$ d. $-\frac{2}{7}$ e. Not Given

27. Graph $|x| < 3$

a.



b.



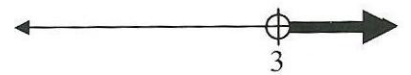
c.



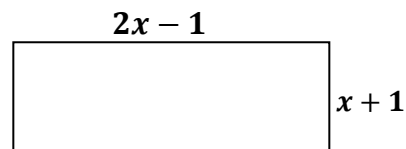
d.



e.



28. Write an expression for the area of the rectangle pictured below.



a. $2x^2 + x - 1$

b. $3x$

c. $2x^2 - 1$

d. $6x$

e. Not Given

29. Find the value of m . $3(2x + 4m) + 16 + 5x = 8(3x - 4) - 13x$

a. $m = -5$

b. $m = -3$

c. $m = -4$

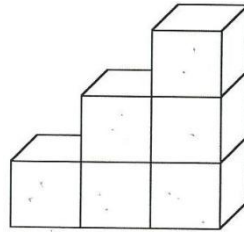
d. $m = -8$

e. $m = -6$

30. A straight line passes through the points (3,-4), (5,1) and (7, y). What is the value of y?

- a. 0 b. 1 c. 4 d. 6 e. Not Given

31. This stairway is made of cubes. How many cubes would you need to make a stairway that is 9 cubes high?



- a. 90 cubes b. 36 cubes c. 45 cubes d. 54 cubes e. Not Given

32. Jana must read a book for her book report. She read half of her book on Tuesday. On Wednesday she read another 30 pages. One Thursday she read 6 more, and on Friday she read half of what was left. She still have 20 pages yet to read, how many pages does the book have?

- a. 56 pages b. 102 pages c. 152 pages d. 100 pages e. Not Given

33. Simplify the expression. $\frac{x^2-y^2}{x^{-1}-y^{-1}}$

- a. $(x - y)^2(x + y)$ b. $-x^2y - xy^2$ c. 247 d. $x+y$ e. Not Given

34. Expand and simplify the expression: $(a + b)^3 + (a - b)^3$.

- a. $2a^3$ b. $2a^3 - 2b^3$ c. $2a^3 - 6a^2b + 6ab^2 - 2b^3$ d. $2a^3 - 6ab^2$ e. $2a^3 + 6ab^2$

35. When going outside on a cold winter day, Jill can choose from three winter coats, five wool scarves, two pairs of boots and four hats. The coats are of distinct colors, and so are the scarves. Jill will never wear her green scarf unless she wears the blue coat. If Jill wears a coat, a scarf, boots and a hat, how many different outfits might her friends see her in?

- a. 120 b. 104 c. 97 d. 119 e. Not Given