

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. The area of a rectangle whose sides have integer length is 24 m^2 and its perimeter is 22 m. What is the length of the small side of this rectangle?

a. 2 m b. 3 m c. 4 m d. 6 m e. 8 m

2. The sum of all of the integers from 1 to 30 is 465. The sum of all of the integers from 1 to 30 that are divisible by 3 is:

a. 135 b. 155 c. 156 d. 165 e. NG

3. The square of $2\frac{1}{2}$ is

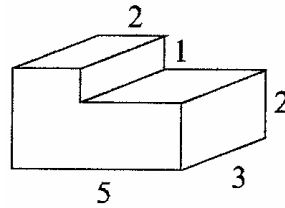
a. 4.25 b. 5.00 c. 5.50 d. 6.25 e. NG

4. What is the mode of Jered's test scores?

80, 90, 40, 85, 90, 70, 90, 65, 60, 60

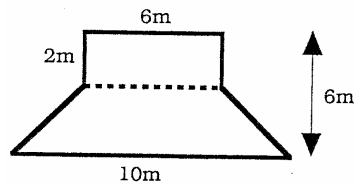
a. 73 b. 60 c. 90 d. 75 e. NG

5. The volume of the solid figure shown is



- a. 12 cubic units b. 30 cubic units c. 35 cubic units d. 36 cubic units e. 40 cubic units
6. The prime factorization of 54 is:
- a. $3^2 \times 6$ b. $2 \times 3^2 \times 9$ c. $2^2 \times 3^2$ d. 2×3^3 e. NG

7. Find the area.



- a. 44 m^2 b. 48 m^2 c. 40 m^2 d. 52 m^2 e. NG
8. $\frac{1}{4}$ is $\frac{1}{2}\%$ of ?
- a. $\frac{1}{2}$ b. 50 c. 5 d. 500 e. NG

9. Mr. Vang has three children. When asked how old his children are, he answers, “Li is 9 years older than Cheng, and Mao is 7 years younger than Li.” The total of their ages is 20 years. How old is Cheng?

a. 2 b. 3 c. 5 d. 12 e. NG

10. Which equation is represented by the following function table.

x	2	3	4	5	6
y	1	3	5	7	9

a. $y = x - 1$ b. $y = 3 - x$ c. $y = 3x - 1$ d. $y = 2x - 3$ e. NG

11. Icky scored the following on four tests: 87, 92, 83, and 78. What must he score on the fifth test so that his average will be 86?

a. 90 b. 89 c. 85 d. 80 e. NG

12. Bernard has twice as many pennies as Anne. Charles has three times as many pennies as Bernard. The number of pennies they have together could be:

a. 44 b. 45 c. 46 d. 47 e. 48

13. Half of the students in a class are girls. If the number of boys was twice as large and the number of girls half as large, what would the percentage of boys in the class become?

- a. 50% b. 60% c. 75% d. 80% e. not enough information

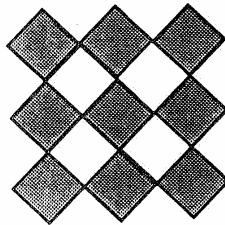
14. How many 4 letter “words” can be construed from the letters *ABCD* if the letter *A* must always be next to the letter *B*? For example, two possible words are *CABD* and *BADC*.

- a. 6 b. 8 c. 10 d. 12 e. 14

15. Which of the following is the largest?

- a. $\frac{2}{1-\frac{1}{3}}$ b. $\frac{2}{1+\frac{1}{3}}$ c. $\frac{3}{1-\frac{1}{2}}$ d. $\frac{3}{1+\frac{1}{2}}$ e. $\frac{1}{\frac{1}{2}+\frac{1}{3}}$

16. How many squares?



- a. 16 b. 17 c. 18 d. 19 e. NG

17. In a class of 25 students, 18 students enjoy mathematics and 22 students enjoy music. If every student in the class enjoys at least one of these, how many students in the class enjoy both?

- a. 3 b. 7 c. 15 d. 20 e. NG

18. The value of $\frac{2}{3} + \frac{2}{9} \times \frac{3}{4}$ is ?

- a. $\frac{5}{9}$ b. $\frac{2}{3}$ c. $\frac{5}{6}$ d. 1 e. $\frac{4}{3}$

19. Using the following set of numbers:

27	29	31	47	49
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Let A = largest prime number

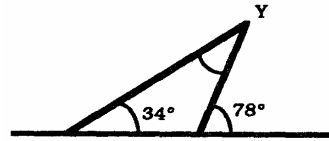
Let B = smallest composite number

Let C = a perfect square

Then $A + B + C =$

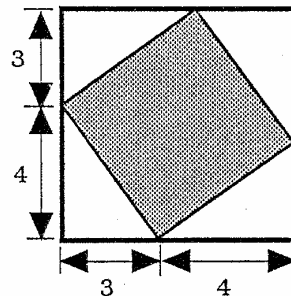
- a. 125 b. 123 c. 107 d. 101 e. NG

20. Find the measure of angle Y.



- a. 146° b. 112° c. 78° d. 44° e. NG
21. At an average speed of 40 km/hr a car takes $1\frac{1}{2}$ hours to travel a certain distance. How long will it take to travel the same distance at 60 km/hr?
- a. $\frac{2}{3}$ hr. b. $\frac{3}{4}$ hr. c. 1 hr. d. $2\frac{1}{4}$ hr. e. 3 hr.
22. If a 190 mile trip takes 19 gallons of gas, how much gas is needed for a 170 mile trip?
- a. 15 gallons b. 16 gallons c. 17 gallons d. 18 gallons e. NG

23. What is the area of the shaded square?



- a. 10 sq. units b. 14 sq. units c. 25 sq. units d. 49 sq. units e. NG

24. Compute: $3(5x - 4x) = 74 - 17$

- a. 57 b. 19 c. 3 R10 d. 91 e. NG

25. Starting at 5 and counting by 7's, Samuel counts 5, 12, 19, ... A number that will be counted is:

- a. 85 b. 86 c. 87 d. 88 e. 89

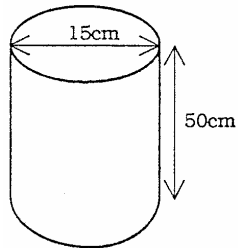
26. Julien tells his friends: "If I had taken twice as many apples, I would have 24 more than I have now". How many apples did Julien take?

- a. 12 b. 24 c. 48 d. 72 e. NG

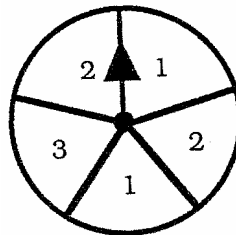
27. The distance from the sun to Neptune is 4,467,000,000 km. This number in scientific notation would be:

- a. 4.467×10^9 km b. 4.5×10^9 km e. NG
c. 4.467^{10} km d. 4.467^8 km

28. Find the surface area of a label that would go around the can pictured.
(Use $\pi = 3.14$)



- a. 2355 cm^2 b. 2177.5 cm^2 c. 1500 cm^2 d. 8831.25 cm^2 e. NG
29. After one spin of the spinner pictured, which of the following events has probability of 1?

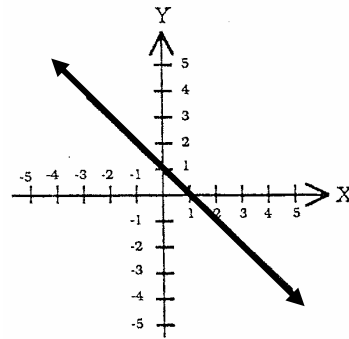


- a. an even number will be selected.
- b. the spinner will land on a 5.
- c. the spinner will land on a 3.
- d. the spinner will land on a 1.
- e. NG

30. Which is greatest?

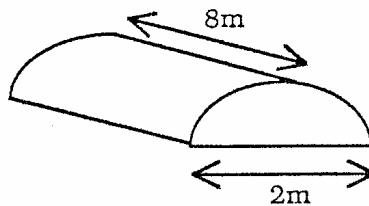
- a. $|2^2 - 12^2|$ b. $(\sqrt{100})^2$ c. 9^2 d. $(2^3)^2$ e. 1^{150}

31. The line shown on the coordinate plane intercepts the x -axis at $(1,0)$ and y -axis at $(0,1)$. The line represents which equation below?



- a. $y = x + 1$ b. $x + y = 1$ c. $x + 1 = y + 1$ d. $y = x - 1$ e. NG

32. Find the volume of the figure below. (Use $\pi = 3.14$)



- a. 12.56 m^3 b. 25.12 m^3 c. 50.24 m^3 d. 100.48 m^3 e. NG

33. Which of these statements is false?

- a.** all squares are rhombi
- b.** all circles are similar
- c.** only some rectangles are trapezoids
- d.** all squares are rectangles
- e.** all rectangles are quadrilaterals

34. If the square of 0.2 is subtracted from its cube, the result is:

- a.** -0.076 **b.** 0.076 **c.** -0.056 **d.** 0.048 **e.** NG

35. The graph of $y = -3x - 2$ passes through which of these points:

A $(9,5)$ B $(-1,5)$ C $(1, -5)$

- a.** A only **b.** B only **c.** C only **d.** B and C **e.** NG