

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. Which equation does not have 12 as a solution?
 a. $x - 4 = 8$ b. $x - 7 = 5$ c. $x - 1 = 13$ d. $x - 6 = 6$ e. $3x = 36$

2. If $x = -\frac{1}{4}$, which is least?
 a. $1 - x$ b. $x - 1$ c. x d. $1 + x$ e. x^2

3. The table to the right shows the amounts of blue and yellow paint needed to obtain the given amounts of green paint. The amount of blue paint needed to produce the green paint is

Amount of Paint		
blue	yellow	green
6	2	8
12	4	16
18	6	24

 a. Four times the amount of yellow paint
 b. Three times the amount of yellow paint
 c. Two times the amount of yellow paint
 d. One-third the amount of yellow paint
 e. NG

4. Marcus can type about 42 words per minute. If he types at this rate for 30 minutes without stopping, about how many words will he type?
 a. 1260 b. 2100 c. 2520 d. 4200 e. NG

5. The sides of a rectangle are 20 cm by 30 cm. The longer side is increased by 10% and the shorter side is decreased by 10%. Find the area of the new figure.
 a. 600 cm^2 b. 594 cm^2 c. 486 cm^2 d. 200 cm^2 e. NG

6. Which of the following is the value of $-7 + 3h$ when $h = -5$?
 a. -8 b. 8 c. -22 d. 22 e. NG

7. The area A of a trapezoid is given by $A = \frac{1}{2}ha + \frac{1}{2}hb$, where h is the height and a and b are the lengths of the parallel sides. If $h = 7$, $a = 5$, and $b = 9$, then $A =$

- a. 14 b. $\frac{49}{2}$ c. 49 d. 98 e. NG

8. A map's key equates 1 inch with 30 miles. If two cities are exactly 25 miles apart, how many inches apart are they on the map?

- a. $\frac{5}{6}$ inches b. $\frac{3}{4}$ inches c. $\frac{26}{30}$ inches d. $1\frac{1}{6}$ inches e. NG

9. 15 lbs of meat will be divided into portions of $\frac{1}{4}$ lb each. How many portions can be made?

- a. $3\frac{3}{4}$ b. $15\frac{1}{4}$ c. 45 d. 60 e. NG

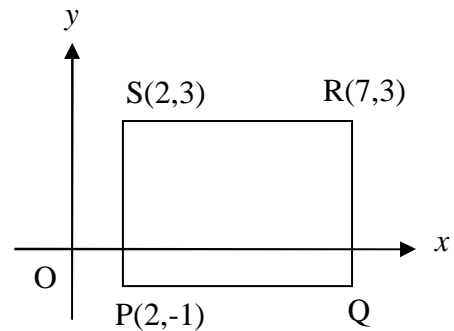
10. Which has the greatest value?

- a. $(2+3)(2+3)$ b. $2+3\times 3$ c. $(2\times 3)(2\times 3)$ d. $2\times 2+3\times 3$ e. $2^3 + 2^3$

11. What is the value of $\frac{1}{\frac{2}{3} + \frac{1}{2}}$?

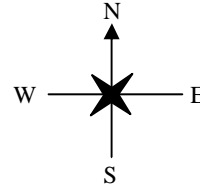
- a. $\frac{5}{7}$ b. $\frac{6}{7}$ c. 1 d. $\frac{7}{6}$ e. 2

12. What are the coordinates of vertex Q of rectangle PQRS shown in the figure to the right?



- a. (-1, 7) b. (3, -1) c. (5, 2) d. (7, -1) e. NG

13. A plane flies 80 km due east and then 60 km due north. How far is it then from its starting point?

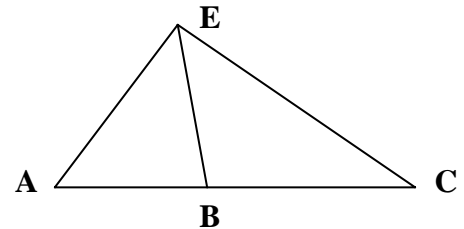


- a. 100 km b. 140 km c. 11.8 km d. 10,000 km e. NG
14. $\frac{2a}{6ab} =$
- a. $\frac{3}{b}$ b. $\frac{1}{3b}$ c. $\frac{b}{3}$ d. $\frac{3}{ab}$ e. NG
15. Suppose today is Tuesday. What day of the week will it be 100 days from now?
- a. Tuesday b. Wednesday c. Thursday d. Friday e. NG
16. A bucket is put under two faucets. If one faucet is turned on alone, the bucket will be filled in 3 minutes; if the other is turned on alone, the bucket will be filled in 2 minutes. If both are turned on, how many seconds will it take to fill the bucket?
- a. 60 seconds b. 72 seconds c. 150 seconds d. 300 seconds e. NG

17. The value of $8 - 2(10 - 6)^2 \div 8 - 4$ is:

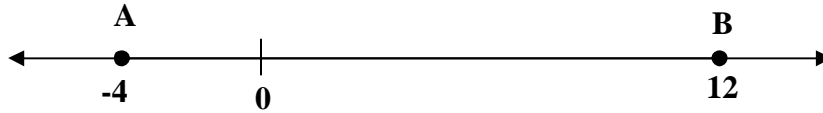
a. 0 b. 8 c. 24 d. -6 e. -2

18. If $\angle A = 70^\circ$, $\angle BEC = 50^\circ$, and $\angle C = 30^\circ$, then $\angle AEB = ?$



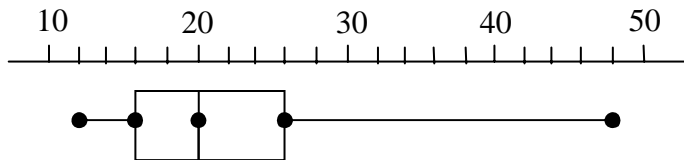
a. 30° b. 40° c. 50° d. 60° e. 70°

19.



On the number line shown above, what number represents the point half the distance between points A and B?

- a. 0 b. 4 c. 8 d. 9 e. NG
20. A triangle is graphed on the coordinate plane. The vertices are (1, 3), (7, 3), and (7, 11). What is the area of the triangle?
a. 16 sq units b. 24 sq units c. 28 sq units d. 31.5 sq units e. 38.5 sq units
21. A triangle has sides of length 5 cm and 4 cm, and a perimeter of 13 cm. Classify the triangle by the length of its sides.
a. scalene b. equilateral c. isosceles d. right e. NG
22. How many different positive 2-digit numbers are divisible by 5 or divisible by 3, but not divisible by both (3 and 5)?
a. 42 b. 36 c. 30 d. 33 e. 39
23. Which of the following is the largest?
a. 68×10^2 b. 678.5 c. 6.63×10^3 d. 6.851×10 e. 6.8×10^2
24. The box and whisker plot below shows the dollar prices of twenty popcorn poppers as listed in *Consumer Reports Buying Guide*, 1991.



Source: *Consumer Reports Buying Guide*, 1991

Approximately how much did the most expensive popcorn popper cost?

- a. \$20 b. \$23 c. \$26 d. \$44 e. \$48

25. Which statement is true?
- a. Every rectangle is always a square.
 - b. Every rectangle is always a parallelogram.
 - c. Every rectangle is always a rhombus.
 - d. Every rectangle is always a trapezoid.
 - e. Every rectangle is always a triangle.

26. In which column will 2,001 appear?

a.	b.	c.	d.	e.
3	6	9	12	
	24	21	18	15
27	30	33	36	
	48	45	42	39
----	----	----	----	
	----	----	----	----

- a. column a b. column b c. column c d. column d e. column e

27. For a certain basketball team, the ratio of games won to games played is 3 to 4. If the team played 48 games, how many games did the team win?

- a. 12 b. 16 c. 24 d. 36 e. NG

28. Which of the following is an irrational number?

- a. $\sqrt{2}$ b. 0.04 c. $1\bar{3}$ d. $\frac{14}{3}$ e. $\frac{1}{9.215}$

29. If you tripled the length and width of any rectangle, by what factor will the area increase?

- a. 3 b. 6 c. 9 d. 12 e. NG

30. Suppose Jack had scores of 98, 86, 88, and 95 on his last four math tests. What is the minimum score he must get on the next test in order to have an average test score of 92.0?

- a. 1 b. 92 c. 93 d. 94 e. 100

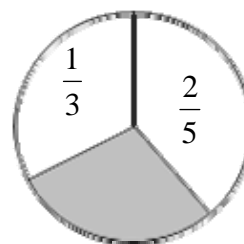
31. A jacket and shirt originally sold for \$40 and \$20, respectively. During a sale, Chris bought the \$40 jacket at a 40% discount and the \$20 shirt at a 55% discount. The total amount saved was what percent of the total of the original prices?

- a. 45% b. $47\frac{1}{2}\%$ c. 50% d. $79\frac{1}{6}\%$ e. 60%

32. A pair of six-sided dice is rolled, and the sum is recorded. What is the probability that this sum is a multiple of three?

- a. $\frac{1}{4}$ b. $\frac{1}{3}$ c. $\frac{2}{3}$ d. $\frac{5}{8}$ e. $\frac{3}{4}$

33. In the figure shown to the right, what fractional part of the circle is shaded?



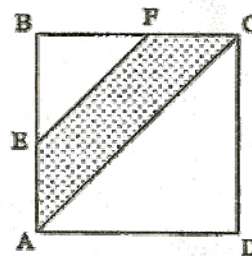
- a. $\frac{4}{15}$ b. $\frac{3}{8}$ c. $\frac{5}{8}$ d. $\frac{11}{15}$ e. NG

34. The following table gives the distribution of the favorite color in a class of 7th grade students. What percent of the class chose green as their favorite color?

Red	Blue	Yellow	Orange	Green	Violet	Brown	Black
4	7	2	3	6	2	0	1

- a. 6 % b. 24 % c. 12.5 % d. 25 % e. NG

35. ABCD is a square with the area 16 sq. meters. E and F are midpoints of sides AB and BC, respectively. What is the area of the trapezoid AEFC, the shaded region?



- a. 2 sq. meters b. 4 sq. meters c. 6 sq. meters d. 7 sq. meters e. NG