Thirty-Third Annual Sixth Grade Math Blast

Binary Star

Directions:

1. Use a #2 pencil.
2. Scratch paper may be used. You may write on this test.
3. Put BOTH NAMES and SCHOOL on the Scantron answer sheet
4. Transfer answers to Scantron carefully; be sure to make marks dark and erasures clean.
5. There is no penalty for guessing.
6. All fractions are to be simplified.
7. Use 3.14 for π.

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1. The clock reads 10:30 pm. What time will it be 22 hours and 30 minutes from now?

   a. 8:00 a.m.

   b. 8:00 p.m.

   c. 9:00 am

   d. 9:00 pm

   e. None of These

2. $a \times b = 30$ and $c \times d = 4$. What is $a \times b \times c \times d$?

   a. 34

   b. 64

   c. 120

   d. 240

   e. None of These

3. Simplify $(-17 + 5x) - (12 + 8x)$

   a. $-5 - 3x$

   b. $-5 - 13x$

   c. $-29 - 3x$

   d. $-29 - 13x$

   e. None of These

4. Six students can assemble 24 bicycles in 8 hours. How many bicycles can 3 students make in 4 hours?

   a. 12

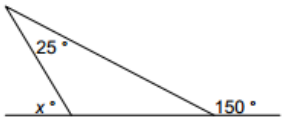
   b. 8

   c. 6

   d. 4

   e. None of These

5. Solve for x.



a. 25°

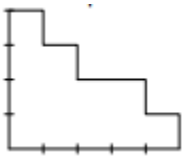
b. 30°

c. 55°

d. Cannot be Calculated

e. None of These

6. In the figure below, assume all the angles that appear to be right angles are actually right angles. What is the perimeter of the figure?



a. 9

b. 16

c. 17

d. 18

e. None of These

7. K is an unknown number between -7 and -6. Which is the largest number?

a. $-k+5$

b. $\frac{k+4}{2}$

c. $\frac{k+2}{2}$

d. $\frac{k+10}{2}$

e. Cannot be Determined

8. Which of the choices below is the reciprocal of $\frac{9}{4}\times\frac{14}{19}$?

a. $\frac{4}{9}\times\frac{14}{19}$

b. $\frac{4}{14}\times\frac{9}{19}$

c. $\frac{9}{4}\times\frac{19}{14}$

d. $\frac{4}{9}\times\frac{19}{14}$

e. None of These

9. If 7 scoops of ice cream weigh 3kg, then 15 scoops weigh

a. $\frac{15}{21}$

b. 7

c. $\frac{45}{7}$

d. 10

e. None of These

10. Of the following, $\sqrt{4}+\sqrt{16}$ is closest in value to

a. $\sqrt{12}$

b. $\sqrt{20}$

c. $\sqrt{64}$

d. $\sqrt{30}$

e. Cannot be Determined

11. How long is the diameter of a circle whose area is π cm^2?

a. π cm

b. 2π cm

c. 1 cm

d. 2 cm

e. None of These

12. Divide a square of side-length 12 into four triangles by drawing both diagonals of the square. The area of one of those triangles is

a. 12

b. 36

c. 18

d. 108

e. None of These

13. What fraction of a meter is $\frac{35}{4}$ cm?

a. $\frac{1}{25}$

b. $\frac{7}{80}$

c. $\frac{4}{35}$

d. $\frac{35}{4}$

e. None of These

14. $\sqrt{\sqrt{81}} = (\underline{\ ?\ })^2$

a. $\sqrt{3}$

b. 3

c. $3\sqrt{3}$

d. 9

e. None of These

15. I drive at a speed of 40 km/hr. I can drive 50% farther in 50% less time if I increase my speed to

a. 60 km/hr

b. 80 km/hr

c. 120 km/hr

d. 160 km/hr

e. None of These

16. In the world of dog figure skating, if 2 hips = 1 hop, and 2 hops = 4 hip-hops, then 8 hip-hops = $\underline{\ ?\ }$ hips

a. 2

b. 4

c. 8

d. 16

e. None of These

17. The additive inverse of $\frac{1}{3}$ is

a. $\frac{1}{3}$

b. -3

c. $\frac{2}{3}$

d. 3

e. None of These

18. The average number of grams per burger in a Burger Bash burger is numerically equal to the average number of days per year during the past four years. That number is nearest to

a. 365.00

b. 365.25

c. 365.33

d. 365.50

e. None of These

19. $5 \times \_\_ = 5 \div \frac{2}{6}$?

a. 4

b. 3

c. $\frac{3}{2}$

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

e. None of These

20. What percent of the total value of 50 quarters is 50 dimes?

a. 10%

b. 20%

c. 35%

d. 40%

e. None of These

21. If Jesse has \$10 in nickels and Kane has \$7 in dimes, then Jesse has ? more coins than Kane.

a. 30

b. 70

c. 130

d. 140

e. None of These

22. The product of Ian's three integers is odd. Their sum must be

a. odd

b. even

c. positive

d. negative

e. None of These

23. If 345 ♠ 54 = 334 ♠ 43, then ♠ could represent

a. $+$

b. $-$

c. $\times$

d. $\div$

e. None of These

24. How many tiles will Kaung need to install a single row of square tiles, each with side-length 1, along all 4 edges of the floor in a 12 X 16 room?

a. 52

b. 56

c. 58

d. 60

e. None of These

25. A triangle with perimeter 8 and integer side-lengths must be

a. isosceles

b. right

c. obtuse

d. equilateral

e. None of These

26. How many millions are in a trillion?

a. 100

b. 1000

c. 100,000

d. 1,000,000

e. None of These

27. Thi sells 60 bikes each month. If $\frac{1}{3}$ of the racing bikes he sells each month equals $\frac{1}{12}$ of all the bikes he sells each month, how many racing bikes does Thi sell each month?

a. 20

b. 15

c. 12

d. 5

e. None of These

28. I plan to give a total of 3 identical slices of pizza to Angelique, Karen, and Nick. Each person will get 0, 1, 2, or 3 slices. In how many different ways can I distribute these 3 slices of pizza?

a. 8

b. 9

c. 10

d. 12

e. None of These

29. A perfect square is the square of an integer. Of the integers from 2 through 99, how many have at least one perfect square factor >1?

a. 36

b. 38

c. 40

d. 44

e. None of These

30. The three hands of an accurate 12-hour clock make a total of ? complete revolutions around the clock's face every 24 hours.

a. 72

b. 733

c. 1466

d. 10,104

e. None of These

31. If my sister has 3 brothers and 2 sisters, then my brother has ? brothers and ? sisters.

a. 2,2

b. 2,3

c. 3,2

d. 3,3

e. None of These

32. As I waited for my plane to arrive, I put 9 ping-pong balls numbered 1 to 9 into an empty bag, then selected one ball at random. What was the probability that the number on the ball that I selected was even?

a. $\frac{1}{5}$

b. $\frac{1}{2}$

c. $\frac{1}{9}$

d. $\frac{5}{9}$

e. None of These

33. When a number is added to $1/3$ of itself, the result is 60. What is the number?

a. 40

b. 45

c. 80

d. 90

e. None of These

34. When the Bike Teens perform at the circus, for every performer that frowns, there are four that smile. This means that ? of the 80 Bike Teens smile while performing.

a. 16

b. 20

c. 60

d. 64

e. None of These

35. If the product of two positive primes is 87, then their sum is

a. 20

b. 30

c. 32

d. 42

e. None of These