26. Sprinkles the dog likes to chase marching bands. When he does, he runs at 18 km per hour, which is the same as running at \( \frac{2}{3} \) m per second.

A) 5 B) 6 C) 10 D) 18

27. If the sum of 2 integers is 25, the product of the integers could not be

A) -150 B) -30 C) 100 D) 154

28. How many of the first 1000 positive integers are multiples of both 4 and 5 but not of 6?

A) 34 B) 42 C) 50 D) 58

29. \( \frac{\frac{3}{5}}{6} = 8 : \frac{?}{?} \)

A) \( \frac{20}{9} \) B) \( \frac{9}{5} \) C) 24 D) 80

30. If the average of three positive integers is 5, the greatest possible value of the sum of the squares of the three integers is

A) 107 B) 149 C) 171 D) 197

31. After a long walk yesterday, Cody wants to go 50% farther today in half as much time. What percent faster will she have to walk today than she did yesterday to meet her goal?

A) 200% B) 300% C) 400% D) 500%

32. What is the greatest prime factor of \( 9^{18} - 3^{32} \)?

A) 5 B) 17 C) 19 D) 31

33. How many factors of \( 3 \times 6 \times 9 \times 12 \times 15 \times 18 \) are greater than 1 and are the square of an integer?

A) 15 B) 14 C) 7 D) 6

34. Each time Bette fills out a form, she marks just one box: A, B, or C. If she checks boxes at random, the probability that in filling out 3 such forms she will mark one each of A, B, and C is

A) \( \frac{1}{4} \) B) \( \frac{1}{3} \) C) \( \frac{2}{9} \) D) \( \frac{3}{10} \)

35. In the sequence 105, 107, 112, 114, . . . , every number besides 105 and 107 is 7 greater than an earlier number. Which of the following may appear in this sequence?

A) 1296 B) 1648 C) 2137 D) 2818

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Steven R. Conrad, Daniel Flegler, and Adam Raichel, contest authors
1. \((1 + 4 + 1 + 4) \times \_?\_ = 14140\)
   A) 10  B) 1010  C) 1414  D) 10000

2. The number of fish in a giant sandwich is divisible by 2, 3, 4, and 5. There could be \_?_ fish.
   A) 2345  B) 4567  C) 5550  D) 6660

3. The average of 25 and \_?_ is 2013.
   A) 994  B) 1019  C) 1988  D) 4001

4. Bob rides his bicycle at 40 km per hour. How far will Bob ride in 3 minutes?
   A) 1 km  B) 2 km  C) 3 km  D) 4 km

5. I am waiting in line with 10 people in front of me, including my brother. My brother has 10 people behind him in line, including me. If my brother is right in front of me, how many people are in line?
   A) 11  B) 19  C) 20  D) 21

6. Each of my 60 books has either a hard cover or a soft cover. If I have 4 times as many hard covers as soft covers, I have \_?_ hard covers.
   A) 48  B) 35  C) 15  D) 12

7. The largest odd factor of 111 is
   A) 3  B) 37  C) 109  D) 111

8. My coin jar has 100 pennies, 200 nickels, 300 dimes, and 400 quarters in it. The coins have a total value of
   A) $91  B) $121  C) $141  D) $161

9. The hundreds digit of the product 123456789\times 234567890 is
   A) 0  B) 1  C) 2  D) 3

10. Ben finds a pair of eyes under 40% of the rocks he checks. If he looks under 400 rocks, he will find \_?_ eyes.
    A) 100  B) 160  C) 200  D) 320

11. \(12 \times \frac{1}{2} \times \frac{1}{3} \times \frac{1}{4} \times \frac{1}{6} = \)
    A) \(\frac{1}{144}\)  B) \(\frac{1}{12}\)  C) 1  D) 12

12. If the measures of the angles of triangle \(T\) are in a 1:2:3 ratio, what kind of triangle is \(T\)?
    A) acute  B) obtuse  C) right  D) isosceles

13. Of the following, which is greatest?
    A) \(9 + 8 \times 6 - 4 + 2\)  B) \((9 + 8) \times 6 - 4 + 2\)
    C) \(9 + 8 \times (6 - 4) + 2\)  D) \((9 + 8) \times (6 - 4) + 2\)

14. Coal miner Axel found diamonds! If the number of diamonds Axel found was the least common multiple of 18, 28, and 38, he found \_?_ diamonds.
    A) 2  B) 84  C) 4788  D) 19152

15. 7 hundredths + 7 thousandths = 7 tenths – \_?_
    A) 0.623  B) 0.777  C) 0.784  D) 0.854

16. \(2^2 \times 2^2 \times 2^2 \times 2^2 + 2^2 = 2^2 \times \_?\_\)
    A) 16  B) 21  C) 32  D) 33

17. If I multiply the number of math contests I have taken in my life by 6 and then add 5, the resulting number cannot be divisible by
    A) 5  B) 7  C) 9  D) 11

18. An evil witch casts a spell to put a princess to sleep for 10000 hours. If the princess falls asleep at 6:00 P.M., she will wake at
    A) 10:00 A.M.  B) 4:00 P.M.  C) 8:00 P.M.  D) 11:00 P.M.

19. Of the rocks in a box, 1/3 are igneous, 60 are metamorphic, and the remaining 40% are sedimentary. How many rocks are in the box?
    A) 160  B) 180  C) 200  D) 225

20. The sum of 4 consecutive even integers is 148. The sum of the digits of the smallest of the 4 integers is
    A) 6  B) 7  C) 9  D) 12

21. Max has 9 pairs of glasses for every 2 surfboards he has. If he has 108 pairs of glasses, he has \_?_ surfboards.
    A) 24  B) 48  C) 80  D) 486

22. 180 + 150% of 180 =
    A) 270  B) 330  C) 450  D) 630

23. The perimeter of a triangle is 50. The length of the longest side of the triangle could be
    A) 15  B) 20  C) 25  D) 29

24. If \(x \otimes y\) is defined as \((x + y)^2 - 2xy\), then 5 \(\otimes 7 =\)
    A) 12  B) 24  C) 35  D) 74

25. A square of side-length \(4\pi\) has the same perimeter as a circle of diameter
    A) 2  B) 4  C) 8  D) 16