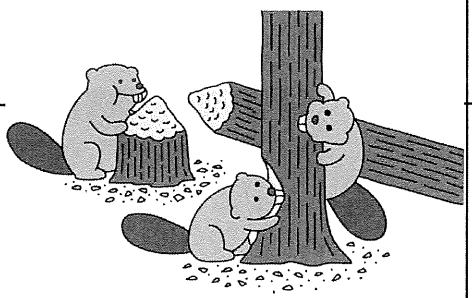
1. $(2024 - 2023) + (24 - 23) = 1 + 1 = \mathbf{2}$.

   A) 0 B) 1 C) 2 D) 20

   Answer: 1. C

2. Beck's 3 baby brothers have 4 baby teeth each. Beck's baby brothers have $3 \times 4 = \mathbf{12}$ baby teeth all together.



   A) 7 B) 9 C) 12 D) 16

   Answer: 2. C

3. $20 + 23 + 20 + 24 = 20 + (20 + 3) + 20 + (20 + 4) = 20 + 20 + 20 + 20 + \underline{7}$.

   A) 3 B) 4 C) 6 D) 7

   Answer: 3. D

4. Ida will get her driver's license in 84 months. There are 12 months in a year, so Ida will get her license in $84 \div 12 = 7$ years.

   A) 7 B) 8 C) 9 D) 12

   Answer: 4. A

5. Of the numbers listed, only **116** is a multiple of 4.

   A) 106 B) 110 C) 114 D) 116

   Answer: 5. D

6. Jan added \$24 to her wallet, which doubled the amount of money in her wallet. Jan must have begun with \$24 and now has **\$48**.

   A) \$42 B) \$48 C) \$72 D) \$96

   Answer: 6. B

7. The perimeter of the square is 4×6 cm = 24 cm. The equilateral triangle with the same perimeter has a side-length of $24 \div 3 = \mathbf{8}$ **cm**.

   A) 4 cm B) 5 cm C) 7 cm D) 8 cm

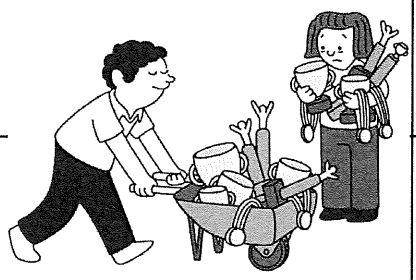
   Answer: 7. D

8. Ana counted to 2024 by 4s, starting with 4. Anna counted $2024 \div 4 = \mathbf{506}$ numbers.

   A) 253 B) 506 C) 2012 D) 2021

   Answer: 8. B

9. $(3 \times 5) \times (5 \times 5) \times (1 \times 2) = 15 \times 25 \times \underline{2}$.



   A) 2 B) 3 C) 5 D) 35

   Answer: 9. A

10. Wanda won 1 fewer prizes than Juan did. Wanda and Juan won a total of 25 prizes. Wanda won 12 prizes and Juan won **13**.

   A) 12 B) 13 C) 24 D) 26

   Answer: 10. B

11. If 1 month before my birthday month is December, my birthday is in January. Three months after January is **April**.

   A) March B) April C) September D) December

   Answer: 11. B

12. The values of each choice in order are 4, 3, 2, and 3, so **A** is greatest.

   A) $(3 \div 3) + 3$ B) $(3 \div 3) \times 3$ C) $(3 + 3) \div 3$ D) $(3 \times 3) \div 3$

   Answer: 12. A

Answers

13. Joy has enough gifts to fill 9 bags with 8 gifts each, a total of $9 \times 8 = 72$ gifts. If Joy fills 3 bags with 24 gifts, she has $72 - 24 = \mathbf{48}$ gifts left.

A) 24 B) 27 C) 36 D) 48

13. D

14. I divided the pigs in my pen into 7 equal groups and had 1 extra pig. Since $50 \div 7$ leaves a remainder of 1, there could be **50** pigs.

A) 50 B) 52 C) 55 D) 56

14. A

15. Otto the otter swam 80 laps in 16 minutes, at a rate of $80 \div 16 = 5$ laps per minute. In 3 minutes, Otto swims $3 \times 5 = \mathbf{15}$ laps.

A) 15 B) 18 C) 24 D) 28

15. A

16. Every 3rd name is underlined and every 4th name is circled. Every 12th name is both underlined and circled, a total of $60 \div 12 = \mathbf{5}$ names.

A) 3 B) 5 C) 15 D) 20

16. B

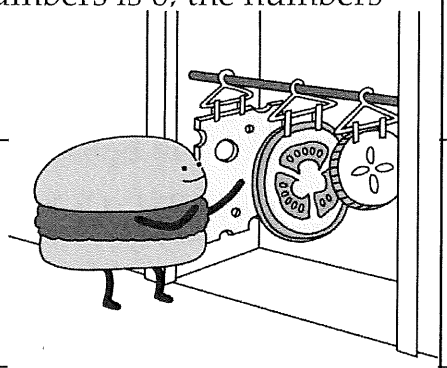
17. In 12 years, CJ will be double his age, so CJ must be 12 years old now. CJ will be 24 in 12 years and 36 in **24** years.

A) 24 B) 32 C) 36 D) 48

17. A

18. If the g.c.f. of two different even whole numbers is 6, the numbers could be 6 and 12. Their sum is **18**.

A) 9 B) 12 C) 15 D) 18



18. D

19. If 6 cheeseburgers cost \$48, 1 cheeseburger costs $\$48 \div 6 = \$8$. One plain burger costs \$1 less, or **\$7**.

A) \$6 B) \$7 C) \$8 D) \$9

19. B

20. $200 \times 200 \times 200 \times 200 = 1\,600\,000\,000 = 2 \times 20 \times 200 \times 2000 \times$ **100** .

A) 10 B) 100 C) 1000 D) 10 000

20. B

21. The check-in line has twice as many people as the check-out line. The total number of people is a multiple of 3, so it could be **123**.

A) 103 B) 113 C) 123 D) 133

21. C

22. The product of the odd factors of $(4\times5)\times23\times(4\times5)\times(3\times8)$: $5\times23\times5\times3$ is **1725**.

A) 23 B) 115 C) 345 D) 1725

22. D

Go on to the next page

23. Each row in a theater has the same number of seats. If I removed 2 rows of seats, there would be 105 seats left. If I removed 5 rows of seats instead, there would be 60 seats left. Since $(105 - 60) \div 3 = 15$, there are 15 seats per row. Add 2 more rows of seats to 105 to get **135** seats.

A) 110 B) 115 C) 135 D) 145

Answer: 23. C

24. The least common multiple of 1, 2, 3, and 4 is **12**.

A) 4 B) 12 C) 24 D) 144

Answer: 24. B

25. Kat cut a paper rectangle into exactly 6 identical squares. The rectangle could have been either 24 cm by 16 cm or 48 cm by 8 cm. Their perimeters are 80 cm and **112** cm.

A) 112 B) 132 C) 152 D) 192

Answer: 25. A

26. Stan started running on his birthday. Since 110 days is 15 weeks and 5 days, the first Wednesday he ran was the 5th day he ran; 4 days before that Wednesday was a **Saturday**.

A) Thursday B) Friday C) Saturday D) Sunday

Answer: 26. C

27. 45 are divisible by 2, 30 by 3, 15 by 6 (both 2 & 3); $(45 - 15)+(30 - 15)=$**45.**

A) 15 B) 30 C) 45 D) 60

Answer: 27. C

28. My silly string of lights flashes once every 3 minutes, changes color once every 7 minutes, and beeps once every 9 minutes. Since the l.c.m. of 3, 7, and 9 is 63, my lights next do all three at 63 minutes after 8:00 PM. The time will be **9:03 PM**.

A) 9:03 PM B) 9:09 PM C) 11:03 PM D) 11:09 PM

Answer: 28. A

29. I added 15 ones digits of 1, carried 1 to the tens column, and added the carried 1 to 14 tens digits of 1. The tens digit of the sum was **5**.

A) 1 B) 3 C) 4 D) 5

Answer: 29. D

30. Aya added each of the numbers from 10 through 49 and got 1180. Aurora rounded each number from 10 through 49 to the nearest 10, and then added. Aurora added $5 \times 10 + 10 \times 20 + 10 \times 30 + 10 \times 40 + 5 \times 50 = 1200$. This differs from Aya's sum by **20**.

A) 19 B) 20 C) 39 D) 40

Answer: 30. B

The end of the contest

Visit our Website at http://www.mathleague.com
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