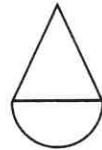


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|---|------------|
| <p>26. Each beaver in a colony of 20 beavers cuts 14 logs for a dam. Each beaver in another colony of 40 beavers cuts 20 logs. If the two colonies are combined, what is the average number of logs cut per beaver? A) 18 B) 17 C) 16 D) 15</p> | <p>26.</p> |
| <p>27. To decrease the area of a circle by 75%, I must decrease its radius by A) 25% B) 50% C) 60% D) 75%</p> | <p>27.</p> |
| <p>28. The product of $\sqrt{2}$ and the reciprocal of the reciprocal of $\sqrt{2}$ is A) $\sqrt{2}$ B) 2 C) $2\sqrt{2}$ D) 4</p> | <p>28.</p> |
| <p>29. A store has 3 melons for every 8 apples, and 5 apples for every 9 pears. If there are 600 melons, how many pears are there? A) 600 B) 1320 C) 1440 D) 2880</p> | <p>29.</p> |
| <p>30. If $r \diamond s$ means $r^2 - 2s$, what is the value of $3 \diamond (4 \diamond 5)$? A) -9 B) -3 C) 0 D) 3</p> | <p>30.</p> |
| <p>31. Jo had four times as many dimes as pennies in her pocket. She spent two dimes and got two pennies in change. Now she has three times as many dimes as pennies. Jo started with <u>?</u> dimes. A) 8 B) 12 C) 28 D) 32</p> | <p>31.</p> |
| <p>32. The base of an isosceles triangle is the diameter of a semicircle, as shown. If the radius of the semicircle is 2, and the area of the entire figure is $2\pi + 16$, what is the greatest possible distance between two points of the figure? A) 10 B) 12 C) 14 D) 16</p> | <p>32.</p> |
| <p>33. Pat's drawer is 1 m wide, 2 m long, and 0.5 m deep. What is its capacity in cubic cm? A) 0.01 B) 100 C) 10000 D) 1000000</p> | <p>33.</p> |
| <p>34. From one end of River Road to the other, house numbers always increase. House numbers on any 2 adjacent houses differ by the same amount. The 11th number is 2011. The 31st is 2131. The 1st number is A) 1901 B) 1945 C) 1951 D) 1968</p> | <p>34.</p> |
| <p>35. Of the positive integers with an odd number of positive factors, how many are less than 2011? A) 1 B) 21 C) 32 D) 44</p> | <p>35.</p> |



2010-2011 Annual 8th Grade Contest

Tuesday, February 15 or 22, 2011

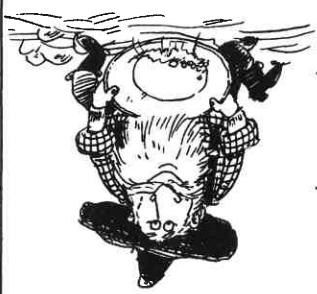

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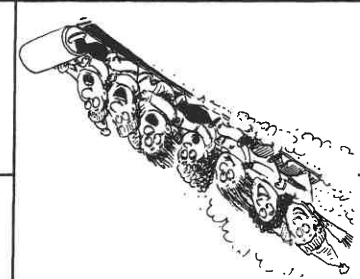
Instructions

- **Time** Do *not* open this booklet until you are told by your teacher to begin. You might be *unable* to finish all 35 questions in the 30 minutes allowed.
- **Scores** Please remember that *this is a contest, and not a test*—there is no “passing” or “failing” score. Few students score as high as 28 points (80% correct). Students with half that, 14 points, *should be commended!*
- **Format, Point Value, & Eligibility** Every answer is an A, B, C, or D. Write answers in the *Answers* column. A correct answer is worth 1 point. Unanswered questions get no credit. You **may** use a calculator.



The end of the contest 8

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|-----|---|
| 1. | I have \$222 but I need \$201. If my friend loans me \$789, how much more do I need? A) \$0 B) \$100 C) \$1000 D) \$1111 |
| 2. | Prospector Al finds a gold nugget weighing 500 grams. In kg, two of these would weigh A) 1 kg B) 10 kg C) 1000 kg D) 10000 kg |
| 3. |  $3 \cdot 6 + 8 \times 0 + 10 \times 2 - 12 \times 0 =$ A) 0 B) 8 C) 26 D) 38 |
| 4. | What is the probability that a randomly chosen positive integer less than 20 will be a multiple of 4? A) $\frac{19}{4}$ B) $\frac{5}{1}$ C) $\frac{19}{5}$ D) $\frac{1}{4}$ |
| 5. | The square of an integer minus the cube of the same integer is <i>never</i> A) positive B) negative C) even D) odd |
| 6. | Which of the following is <i>not</i> the product of two prime numbers? A) 85 B) 94 C) 119 D) 127 |
| 7. | $7 \cdot 10 \times 10 \times 5 \times 20 \times 4 \times 25 \times 2 \times 50 \times 100 = \frac{?}{2} \times 100$ A) 4 B) 5 C) 100^4 D) 100^5 |
| 8. | The ratio of the number of dimes in \$100 to the number of quarters in \$200 is A) 5:4 B) 4:5 C) 5:2 D) 2:5 |
| 9. | My three friends and I divide the cost of a restaurant dinner equally. If the cost was \$60 after a 20% tip was added, what was the cost for each of us without the tip? A) \$12 B) \$12.50 C) \$16 D) \$16.67 |
| 10. | It takes 12 hours for 18 workers to build a wall. At this rate, how many hours would it take 12 workers to build the wall? A) 6 B) 8 C) 14 D) 18 |
| 11. | Midway between 10:59 PM today and 11:01 PM tomorrow is tomorrow at A) 10 AM B) 11 AM C) 10 PM D) 11 PM |
| 12. | Which of the following has the most factors of 5?  A) 125 B) 500 C) 625 D) 750 |
| 13. | Eight hundredths is what percent of four thousandths? A) 5% B) 20% C) 500% D) 2000% |

| | |
|-----|--|
| 14. | Mr. B. Loon has 2 fancy balloons for every 7 plain ones. He has a total of 621 balloons. How many are fancy? A) 138 B) 183 C) 207 D) 483 |
| 15. | $\frac{1}{\frac{2}{\frac{1}{3} + \frac{1}{4}}} =$ A) $\frac{7}{4}$ B) $\frac{7}{6}$ C) $\frac{6}{7}$ D) $\frac{4}{7}$ |
| 16. | How many digits are in the decimal representation of the product of 2^5 and 10^{52} ? A) 54 B) 55 C) 56 D) 57 |
| 17. | I wrote the integers from 1 to 100 in order. The 50th digit I wrote was A) 0 B) 3 C) 4 D) 9 |
| 18. | Which of the following has the fewest different prime factors? A) 30 B) 32 C) 34 D) 36 |
| 19. | The difference between an angle of an equilateral triangle and an angle of an isosceles right triangle could be A) 15° B) 45° C) 60° D) 75° |
| 20. | What is the least common multiple of 4^8 and 8^4 ? A) 4^4 B) 4^8 C) 8^4 D) 8^8 |
| 21. | The sum of the digits of a prime number greater than 9 <i>cannot</i> be A) 2 B) 3 C) 4 D) 5 |
| 22. | The number of seconds in an hour divided by the number of minutes in an hour is A) 5 B) 12 C) 60 D) 1440 |
| 23. | My current age will be tripled 16 years after it's doubled. My current age is A) 8 B) 12 C) 16 D) 32 |
| 24. | The average of 10 positive integers is 10. The greatest of them <i>cannot</i> be A) 10 B) 50 C) 90 D) 92 |
| 25. | If each toboggan holds a prime number of riders, including at least 2 children and 1 adult, which of the following could be the number of riders on 21 toboggans?  A) 110 B) 112 C) 121 D) 122 |