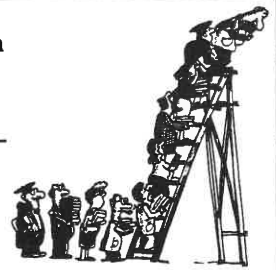


<p>25. Joy walks 60 m in 180 sec., so she walks 1 m in 3 secs. She slides 9 times faster, so she slides 9 m in 3 secs. Thus, she slides 90 m in 30 seconds. A) 90 m B) 180 m C) 270 m D) 810 m</p>	<p>25. A</p>
<p>26. If $\frac{2}{3} \times \#$ is $\frac{1}{2}$, then $\frac{1}{3} \times \#$ is $\frac{1}{4}$. Thus, $\frac{1}{6} \times \#$ is $\frac{1}{8}$. A) $\frac{1}{8}$ B) $\frac{2}{9}$ C) $\frac{3}{16}$ D) $\frac{4}{15}$</p>	<p>26. A</p>
<p>27. 4 hrs. = 240 mins. = 14 400 secs.; 4 hrs. is $(14\,400 \div 24) \times 100\% = 60\,000\%$. A) 600% B) 3600% C) 60 000% D) 360 000%</p>	<p>27. C</p>
<p>28. Let Cal's height be 100 units. Then Bo's height is 75 units and Abe's height is 105 units. Abe's height is 105 percent of Cal's height. A) 25% B) 85% C) 95% D) 105%</p>	<p>28. D</p>
<p>29. $18^{180} = 2^{180} \times (3^2)^{180} = 2^{180} \times 3^{360}$, and 12^{360} is divisible by 3^{360}. A) 12^{120} B) 12^{180} C) 12^{240} D) 12^{360}</p>	<p>29. D</p>
<p>30. Each of the 51 even integers between 19 and 121 is 1 less than each of the 51 odd integers between 20 and 122. Their sums differ by 51. A) 1 B) 51 C) 100 D) 101</p>	<p>30. B</p>
<p>31. Since $30 = 5 \times 6$, $70 = 5 \times 14$, and $84 = 6 \times 14$, the box's dimensions are 5, 6, and 14. The volume is $5 \times 6 \times 14$. A) 184 B) 368 C) 420 D) 176 400</p>	<p>31. C</p>
<p>32. The consecutive even integers are shown for A, B, D. A) -2, 0, 2, 4 B) 0, 2, 4, 6 C) 16 D) 2, 4, 6, 8</p>	<p>32. C</p>
<p>33. If the product is divided by 210, the remainder is 0 since $210 = 2 \times 3 \times 5 \times 7 =$ product of the first 4 primes. A) 0 B) 3 C) 7 D) 21</p>	<p>33. A</p>
<p>34. We'll use ROY G BIV. With R or G, Amy can pick 6 pairs: OY, OI, OV, YI, YV, or IV. That's 12 so far. Without R or G, Amy can pick OYI, OYV, OIV, and YIV. In all, Amy can pick 16 color combinations. A) 10 B) 16 C) 20 D) 24</p>	<p>34. B</p>
<p>35. The sum of the lengths of the two other sides is greater than 9. The perimeter is greater than $9+9 = 18$. Only choice D is greater than 18. A) 11 B) 16 C) 18 D) 38</p>	<p>35. D</p>



Information & Solutions

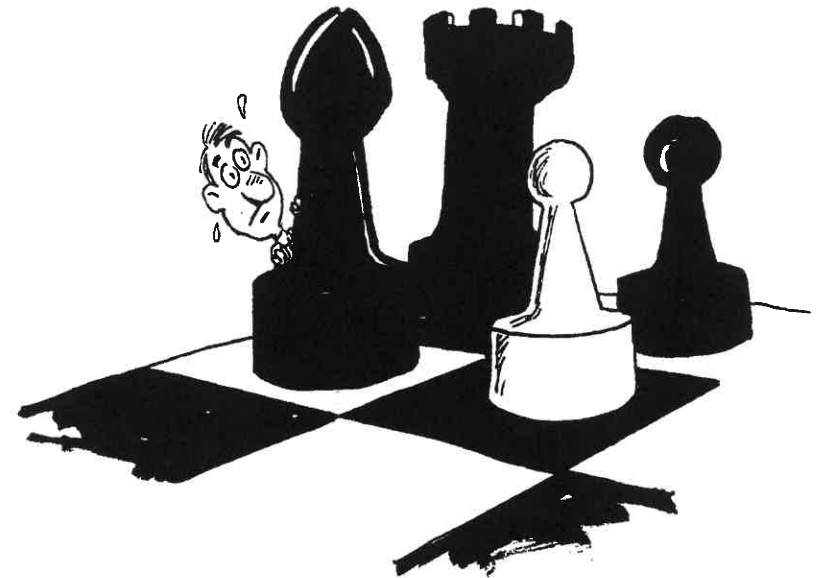
2010-2011 Annual 7th Grade Contest

Tuesday, February 15 or 22, 2011


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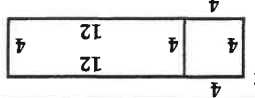
Contest Information

- Solutions** Turn the page for detailed contest solutions (written in the question boxes) and letter answers (written in the *Answer Column* to the right of each question).
- 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, *deserve commendation!*
- Answers and Rating Scales** Turn to page 142 for the letter answers to each question and the rating scale for this contest.



The end of the contest 7

1.	B	A) 2013 B) 2011 C) 2 D) 1
2.	D	A) 3×7 B) 7×7 C) 3^7 D) 7^3
3.	B	Ben finished wrapping 30 boxes at 1:30 PM. It took him $5 \times 30 = 150$ minutes = $2\frac{1}{2}$ hours. He began at 11:00 AM. A) 10:30 B) 11:00 C) 11:30 D) 11:50
4.	D	4. $2\frac{4}{3} + 3\frac{5}{4} = \frac{4}{11} + \frac{5}{19} = \frac{4}{55} + \frac{5}{76} = \frac{4}{131} + \frac{5}{20} = 6\frac{11}{20}$ A) $5\frac{5}{3}$ B) $5\frac{11}{20}$ C) $6\frac{5}{3}$ D) $6\frac{11}{20}$
5.	A	5. The ones digit of the cube of 432 is the ones digit of 2^3 , which is 8. A) 8 B) 6 C) 4 D) 2
6.	A	6. Each choice has been rounded to the nearest whole number. The remainder when divided by 3 is shown. A) 14, R=2 B) 16, R=1 C) 16, R=1 D) 18, R=0
7.	B	7. Since $351 \div 3 = 117$, and $117 = 3 \times 3 \times 13$, another prime factor is 13. A) 7 B) 13 C) 39 D) 117
8.	C	8. Since $90^\circ - 28^\circ = 62^\circ$, choice C is correct. Note: The smallest angle must be 45° or less. A) 1° B) 30° C) 62° D) 91°
9.	C	9. The least common multiple of $45 = 3 \times 3 \times 5$ and $105 = 3 \times 5 \times 7$ is $315 = 3 \times 3 \times 5 \times 7$. That's 5 hours and 15 minutes after 1 PM, which is 6:15 PM. A) 3:30 PM B) 4:30 PM C) 6:15 PM D) 7:15 PM
10.	B	10. If 6 cronks = 14 crunks, then 3 cronks = 7 crunks, and 9 cronks = 21 crunks. A) 24 B) 21 C) 20 D) 17
11.	D	11. $20 \div 0.4 = 50$. A) $\frac{1}{2}$ B) 8 C) 25 D) 50
12.	C	12. (Area of square) - (area of triangle) = $36 - 8 = 28$. 
13.	B	13. The only two prime numbers between 80 and 90 are 83 and 89. A) 1 B) 2 C) 3 D) 4

14.	D	14. There are 20 chess pieces. There are $20 - 12 = 8$ black pieces. The ratio of black pieces to all pieces is $8:20 = 2:5$. A) 1:2 B) 1:4 C) 2:3 D) 2:5
15.	A	15. The cube of 2 is 8, the square of 2 is 4, and $8 + 4 = 12$. A) 2 B) 4 C) 16 D) 64
16.	A	16. My 7 Larry Roter books of 300 pages each have 2100 total pages. My 5 Chronicles of Biarnia books of 324 pages each have 1620 total pages. The average page count is $(2100 + 1620) \div 12 = 310$. A) 310 B) 312 C) 314 D) 316
17.	B	17. The product of the first 3 positive perfect squares is $1 \times 4 \times 9 = 36$. The reciprocal is choice B. A) $\frac{1}{576}$ B) $\frac{1}{36}$ C) 36 D) 576
18.	C	18. Each piece is $12 \text{ m} \div 4 = 3 \text{ m}$ long. The circumference of each wheel must also be 3 m. Since $C = \pi d$, we have $3 \text{ m} = \pi d$. Therefore, $d = (3/\pi) \text{ m}$. A) 6π B) 3π C) $\frac{\pi}{3}$ D) $\frac{2\pi}{3}$
19.	B	19. The sum of four consecutive whole numbers is 110. Since $110 \div 4 = 27.5$, the numbers are 26, 27, 28, and 29. The desired sum is $26 + 29$. A) 53 B) 55 C) 57 D) 58
20.	A	20. If the measure of one angle of a triangle is greater than 90° , the other angles must each have measures less than 90° . They are both acute. A) acute B) obtuse C) right D) scalene
21.	D	21. The area of the entire figure is 64 and its height is 4. Thus, the base of this figure is $64 \div 4 = 16$. The perimeter is $2 \times (4 + 16) = 40$. 
22.	A	22. $1440000 \text{ mins.} \div 60 = 24000 \text{ hrs.} = 1000 \text{ days}$; so it's 10 AM again. A) 10 AM B) 11 AM C) 10 PM D) 11 PM
23.	C	23. $6:8.4 = (6 \times 10) : (8.4 \times 10) = 60:84 = (60 \div 12) : (84 \div 12) = 5:7$. A) 2:4.4 B) 3:5 C) 5:7 D) 6.8:4
24.	C	24. The sum of the measures of two unequal angles of a parallelogram is 180° . So these two angles must have measures of 30° and 150° . A) 100° B) 120° C) 150° D) 160°