AMC 8-style original practice test - Edition 1

Student paper

Name: _____ Date: _____

Choose exactly one of the five answers for each question. Work without a calculator.

This is one fixed original paper. For timed practice, allow 40 minutes; otherwise work at your own pace.

Use the separate hint sheet only after making an attempt. Answers and complete solutions are in the teacher edition.

Optional practice time: 40 minutes.

1. A museum charges $7 for each adult ticket and $4 for each child ticket. What is the cost of 2 adult tickets and 3 child tickets?

A. $22 B. $24 C. $25 D. $26 E. $29

2. A $50 backpack is discounted by 20%. A sales tax of 10% is then applied to the discounted price. What is the final price?

A. $35 B. $40 C. $44 D. $45 E. $55

3. The three angles of a triangle are in the ratio 2:3:4. What is the smallest angle?

A. 20 degrees B. 30 degrees C. 40 degrees D. 45 degrees E. 60 degrees

4. A two-digit number is formed using two different digits from 3, 5, and 7. How many such numbers are divisible by 5?

A. 1 B. 2 C. 3 D. 4 E. 6

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5. A rectangle has perimeter 30 cm. Its length is twice its width. What is its area?

A. 25 square cm B. 40 square cm C. 45 square cm D. 50 square cm E. 100 square cm

6. Five numbers have mean 12. One of the numbers, 8, is removed. What is the mean of the remaining four numbers?

A. 10 B. 11 C. 12 D. 13 E. 14

7. How many integers from 1 through 60, inclusive, are divisible by 4 or by 6?

A. 15 B. 18 C. 20 D. 25 E. 30

8. A fair six-sided die is rolled twice. What is the probability that the sum of the two results is odd?

A. 1/6 B. 1/3 C. 1/2 D. 2/3 E. 5/6

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9. A sequence starts at 3. To obtain the next terms, add 2, then 4, then 6, and continue adding consecutive positive even numbers. What is the eighth term?

A. 45 B. 51 C. 57 D. 59 E. 75

10. On a square grid, a robot travels from (0, 0) to (3, 2), using only steps one unit right or one unit up. How many routes avoid the point (1, 1)?

A. 3 B. 4 C. 5 D. 6 E. 10

11. A team plays 12 games. It earns 3 points for a win, 1 point for a tie, and 0 points for a loss. It has 4 ties and 22 points. How many losses does it have?

A. 0 B. 1 C. 2 D. 4 E. 6

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12. A rectangular floor is 84 cm by 60 cm. It is covered with identical square tiles of the largest possible whole-number side length, with no gaps or cutting. How many tiles are needed?

A. 12 B. 24 C. 30 D. 35 E. 42

13. A tank is one-third full. Adding 12 liters makes it five-sixths full. What is the tank's capacity?

A. 18 liters B. 20 liters C. 24 liters D. 30 liters E. 36 liters

14. All six faces of a cube are painted. The cube is then cut into 27 equal small cubes in a 3 by 3 by 3 arrangement. How many small cubes have exactly two painted faces?

A. 6 B. 8 C. 12 D. 18 E. 20

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15. How many ordered pairs of positive integers (x, y) satisfy x + 2y = 15?

A. 5 B. 6 C. 7 D. 8 E. 14

16. Triangle ABC has area 72 square units. M is the midpoint of AB. N lies on AC with AN:NC = 1:2. What is the area of triangle AMN?

A. 8 B. 12 C. 18 D. 24 E. 36

17. How many integers from 1 through 100 leave remainder 2 when divided by 5 and remainder 3 when divided by 7?

A. 1 B. 2 C. 3 D. 4 E. 5

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18. A bag contains 3 red counters and 2 blue counters. Two counters are chosen uniformly without replacement. What is the probability that they have the same color?

A. 1/5 B. 3/10 C. 2/5 D. 1/2 E. 3/5

19. A three-digit palindrome has hundreds digit 2 and is divisible by 9. What is the number?

A. 222 B. 232 C. 242 D. 252 E. 272

20. Six chairs are in a row. In how many ways can two of the chairs be selected so that they are not adjacent? The two selected chairs are not assigned to particular people.

A. 8 B. 9 C. 10 D. 12 E. 15

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21. At 3:20 on a clock whose hands move continuously, what is the smaller angle between the hour hand and the minute hand?

A. 10 degrees B. 20 degrees C. 25 degrees D. 30 degrees E. 40 degrees

22. A 4 by 4 board consists of 16 unit squares. How many squares of all sizes have sides along the grid lines?

A. 16 B. 20 C. 25 D. 30 E. 40

23. Use the digits 1, 2, 3, and 4 exactly once to form two two-digit numbers. What is the smallest possible positive difference between the two numbers?

A. 3 B. 5 C. 7 D. 9 E. 11

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24. Positive integers a and b satisfy a + b = 12. Their product is not divisible by 3. What is the greatest possible product?

A. 27 B. 30 C. 32 D. 35 E. 36

25. Two players alternate removing 1, 2, or 3 stones from a pile of 30 stones. The player who removes the last stone wins. Which first move guarantees the first player a win if they continue to play correctly?

A. Remove 1 stone B. Remove 2 stones C. Remove 3 stones D. Any legal first move E. No first move guarantees a win