

# AMC 8/10 Mock

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## **Contents**

<b>1</b>	<b>Questions 1-25</b>	<b>3</b>
<b>2</b>	<b>Feedback</b>	<b>7</b>
<b>3</b>	<b>Integrity Statement</b>	<b>8</b>

## 1 Questions 1-25

1. How many minutes is it from 4:30 PM- 6:17 PM?  
(A) 97      (B) 100      (C) 137      (D) 107      (E) 117
2. A student was absent in a class of 15 students. The 14 students averaged 79 percent. When the last student took the test, the average was raised to 80 percent. What did the student score?  
(A) 94      (B) 100      (C) 96      (D) 89      (E) 93
3. A student measured a rhombus with diagonals 40 and 42. What is the perimeter of this rhombus?  
(A) 112      (B) 68      (C) 80      (D) 116      (E) 120
4. How many ways can we seat 6 people on a circular table?  
(A) 720      (B) 24      (C) 5040      (D) 54      (E) 120
5. In Monroe Middle School, there are 308 6th graders. There are 179 6th graders that take Algebra 1. There also 149 6th graders that take Math 7/8. How many 6th graders that take Math 7/8 don't take Algebra 1?  
(A) 308      (B) 49      (C) 129      (D) 159      (E) 20
6. Tess measured two interior angles of a triangle as 48 degrees and 76 degrees. What is the measure of the exterior angle of the last interior angle?  
(A) 37      (B) 133      (C) 101      (D) 116      (E) 124
7. Jeff started reading a book. He couldn't remember the exact page number he was on, but he remembered the number of digits he read. If he read a total of 525 digits, how many pages did he read?  
(A) 215      (B) 212      (C) 210      (D) 211      (E) 213
8. Donald Trump has an approval rating of 36%. After bragging about it at his latest press conference, he lost 20% of his approval rating. Then he gained 40% back when he signed the new order for police reform. What is his approval rating?  
(A) 43.2%      (B) 36%      (C) 40.32%      (D) 45%      (E) 40%
9. A store has a sale in which they reduce prices by 40%. When the sale ends, the store reduces its prices back to original, having an  $x\%$  increase in prices. What is the difference between  $x$  and 40? Express your answer to the nearest whole number.  
(A) 27      (B) 25      (C) 26      (D) 0      (E) 20
10. Bob starts on a journey from his hometown to Mathsville. He walks 97 kilometers west and 37 kilometers south. How many kilometers could he

have saved if we walked on the shortest path? Express your answer to the nearest tenth of a kilometer.

- (A) 30.3      (B) 30.2      (C) 30      (D) 30.1      (E) 30.6

11. The ratio of a certain rectangle's length to width ratio is 12:5 respectively. If the rectangle has a diagonal length of  $f$ , and the area can be expressed as  $kf^2$ , what is the value of  $k$ ? Express your answer as a fraction in lowest terms.

- (A)  $\frac{12}{25}$       (B)  $\frac{60}{121}$       (C)  $\frac{30}{121}$       (D)  $\frac{50}{169}$       (E)  $\frac{60}{169}$

12. A floor with length 16 ft and width 19 ft is tiled. There are 304 tiles. A bear walks along the diagonal of the floor. How many tiles does it go over?

- (A) 35      (B) 38      (C) 33      (D) 34      (E) 36

13. How many ways can you rearrange "Mississippi"? Hint:  $11!$  is 39916800.

- (A) 39916800      (B) 2494800      (C) 34650      (D) 69300      (E) 17325

14. What is the greatest number less than 16000 that has an odd number of factors?

- (A) 15876      (B) 16000      (C) 15999      (D) 15976      (E) 15879

15. How many perfect cube and perfect square factors does  $561^{12}$  have?

- (A) 465      (B) 467      (C) 9      (D) 468      (E) 441

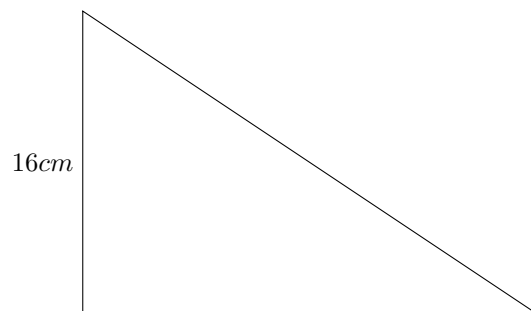
16. The semicircle of area  $1250\pi$  centimeters is inscribed inside a rectangle. The diameter of the semicircle coincides with the length of the rectangle. Find the area of the rectangle.

- (A) 2500      (B) 5000      (C) 10000      (D) 500      (E) 1000

17. A sphere is circumscribed in a cube. The cube has side length 7. What is the volume of the sphere? Express your answer in terms of  $\pi$ .

- (A)  $36\pi$       (B)  $7\pi$       (C)  $32\pi$       (D)  $36.75\pi$       (E)  $40\pi$

18. 16 is the shortest leg in a right triangle where the hypotenuse and longer leg differ by 2. What is the average of the hypotenuse and the longer leg?



(A) 65      (B) 63      (C) 64      (D) 48      (E) 71

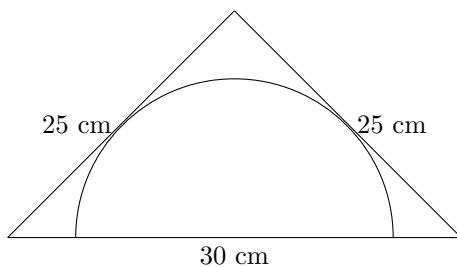
19. What is the least number with 36 factors?

(A) 1260      (B) 1800      (C) 1440      (D) 1600      (E) 504

20. What is the difference between the smaller and larger angle formed by the hour hand and minute hand at 9:32?

(A) 72      (B) 84      (C) 94      (D) 90      (E) 172

21. An isosceles triangle has a base of 30 and a leg of 25. There is a semicircle inscribed in the isosceles triangle. What is the area inside the triangle but outside the circle? Express your answer in terms of  $\pi$ .



(A)  $300-36\pi$       (B)  $300-144\pi$       (C)  $300-72\pi$       (D)  $300-48\pi$       (E)  $300-96\pi$

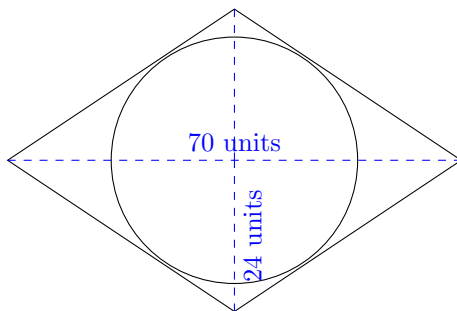
22. What 6 digit number has its digit reversed when multiplied by 4?

(A) 398765      (B) 219978      (C) 812379      (D) 512490      (E) 543972

23. How many ordered quintuplets (a, b, c, d, e) are there such that the sum of the quadruplet is 29?

(A) 17296      (B) 9086      (C) 17890      (D) 20475      (E) 19069

24. There is a circle inscribed in a rhombus. If the lengths of the diagonals are 70 and 24, what is the length of the radius of the inscribed circle? Express your answer to the nearest hundredth.



(A) 11.47      (B) 11.35      (C) 12.68      (D) 13.48      (E) 11.28

25. What is the sum of the digits of the sum of the digits of all the numbers from 1-1000000?

(A) 10      (B) 100      (C) 19      (D) 276      (E) 69

## **2 Feedback**

1. Do you think the test should be harder?
2. Should we make a different AMC next time?
3. Was an AMC 8/10 a good idea?

### **3 Integrity Statement**

I insert username here agree that I didn't use the internet, collaborate with other people, and use any tools that are not allowed. I also agree that I did not go over the 40 minute time limit to finish this test.