

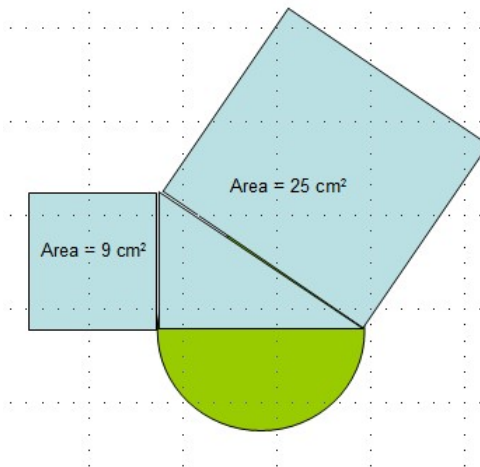
**MOMS Math Mania 2 (55 Minutes). Select the right answer by filling the circle.**

Name: \_\_\_\_\_

1. Steve start out on his moped at a rate of 40 miles per hour. Two hours later, Bill drives his car along the same route at 55 miles per hour. In how much time will Bill overtake Steve?

- A. 30 minutes
- B. 1 hour 30 minutes
- C. 4 hours
- D. 5 hours and 20 minutes

2. The area of green semi-circle is:



- A.  $2\pi \text{ cm}^2$
- B.  $3\pi \text{ cm}^2$
- C.  $4\pi \text{ cm}^2$
- D.  $5\pi \text{ cm}^2$

3. Sylvia has a collection of quarters and nickels amounting to \$18.70. If there are 20 more nickels than quarters, how many of each kind of coin does she have?

- A. 20 quarters and 50 nickels
- B. 39 quarters and 21 nickels
- C. 59 quarters and 79 nickels
- D. None of the above

4. A cylindrical bucket of height 40 cm and radius 7 cm is filled with water. The water is poured into a cube bucket of side 40 cm. Up to what height will the cube bucket be filled.

- A. 3.85 cm
- B. 5 cm
- C. 10 cm
- D. 6.28 cm

5. Compute  $\frac{\frac{1}{323} + \frac{1}{19}}{\frac{171}{(19)(323)}}$

- A.  $\frac{25}{19}$
- B. 2
- C.  $\frac{96}{323}$
- D. 0.96

6. To reduce 32 grams of a 25% solution of antiseptic to a 20% solution, how much distilled water should a pharmacist add?

- A. 8 grams
- B. 20 grams
- C. 1 kilogram
- D. 0.8 grams

7. A man wishes to invest \$10,000. He places a certain amount in a bank which pays 6% interest and the remainder in a stock which yields a 7% dividend. How much money did he invest in the bank and how much in the stock if his total earnings for 1 year are \$665.00?

- A. \$3500 in the bank and \$6500 in the stocks
- B. \$3000 in the bank and \$7000 in the stocks
- C. \$2500 in the bank and \$7500 in the stocks
- D. \$5500 in the bank and \$4500 in the stocks

8. It takes Mr. Rose 10 hours to complete a printing job. His helper John can complete the same job in 15 hours. If Mr. Rose and John work together, how long will it take to complete the job?

- A. 9 hours to complete the job together
- B. 7 hours to complete the job together
- C. 6 hours to complete the job together
- D. 5 hours to complete the job together

9. Robert travels 12 miles east, then 3 miles south and then 8 miles west. What is the shortest distance he can travel to return to his starting point.

- A. 21 miles
- B. 12 miles
- C. 9 miles
- D. 5 miles

10. Juan is 5 years older than his brother Carlos. Five years ago, Juan was twice as old as Carlos. How old is each now?

- A. Carlos is 12 and Juan is 17 years old now
- B. Carlos is 8 and Juan is 12 years old now
- C. Carlos is 15 and Juan is 20 years old now
- D. Carlos is 10 and Juan is 15 years old now

11. Arrange the fractions in ascending order.  $\frac{3}{7}, \frac{1}{9}, \frac{14}{25}, \frac{3}{5}$

- A.  $\frac{3}{7}, \frac{1}{9}, \frac{14}{25}, \frac{3}{5}$
- B.  $\frac{1}{9}, \frac{3}{7}, \frac{14}{25}, \frac{3}{5}$
- C.  $\frac{3}{5}, \frac{1}{9}, \frac{14}{25}, \frac{3}{7}$
- D.  $\frac{4}{5}, \frac{9}{17}, \frac{3}{5}, \frac{2}{3}$

12. The budget of a small city is \$15,000,00 for the year while yearly budget for the state is \$70,000,000. What is the ratio of the budget for the city to that for the state?

- A.  $\frac{5}{7}$
- B.  $\frac{2}{9}$
- C.  $\frac{25}{19}$
- D.  $\frac{3}{14}$

13. If  $-2x > -8$  then

- A.  $x < 4$
- B.  $2x > 8$
- C.  $x > -4$
- D.  $x > 1$

14. If a weight of 130 pounds is 14 inches from the fulcrum, how far must a weight of 140 pounds be placed from the fulcrum to maintain balance (hint: weight times distance from the fulcrum must match to maintain balance)

- A. 14 inches
- B. 13 inches
- C. 12 inches
- D. 7 inches

15. How much is the following Roman Numeral worth.

MMMDCXLIX

- A. 661
- B. 1559
- C. 959
- D. 3549

16. A road 10 feet wide is built around a circular park of radius 50 feet. if the cost of construction of road is \$50 per square foot what is cost to build the road? (hint: the area of circle is  $\pi r^2$  where  $\pi = 22/7$ )

- A. \$661,000.00
- B. \$15,590.59
- C. \$172,857.14
- D. \$35491.50

17. The charge for admission to the natural history museum is \$1.50 for adults and 1 dollar for children. If 5,000 people visited the museum in one day and the total receipts were \$6500, how many of each kind of tickets was sold?

- A. 1500 adults and 3000 children
- B. 3000 adults and 2000 children
- C. 2000 adults and 3000 children
- D. 2000 adults and 5000 children

18. A bag contains 12 white balls and 18 red ones, one ball is drawn at random. What is the probability that the ball drawn is white?

- A.  $\frac{2}{5}$
- B.  $\frac{2}{7}$
- C.  $\frac{5}{7}$
- D.  $\frac{1}{2}$

19.  $12\frac{1}{4}\%$  of 800 is?

- A. 68
- B. 98
- C. 78
- D. 88

20. The rate of a plane is 9 times that of a freight train. A freight train is 8 times faster than a bicycle. If bicycle goes at a speed of 10 miles/hour, what is the speed of a plane?

- A. 620 miles/hr
- B. 550 miles/hr
- C. 880 miles/hr
- D. 720 miles/hr

21. Bricks from a square lot of side 11 feet are used to create a circular boundary. What will be the area of this circular lot? A semicircle is placed on top of a square of side 14 cm. If the perimeter of the figure is used to create a square, what would the new square's side length be?

- A.  $169 \text{ ft}^2$
- B.  $81 \text{ ft}^2$
- C.  $154 \text{ ft}^2$
- D.  $366 \text{ ft}^2$

22. Which best describes an equilateral triangle:

- A. Cannot be a right angle triangle
- B. Is also an isosceles triangle
- C. Has all the angles and sides equal
- D. All of the above

23. Solve the following expression

$$[9 \times (13 - 5) \div (7 - 3)] + \frac{2}{3}$$

- A.  $\frac{56}{3}$
- B.  $\frac{47}{3}$
- C.  $\frac{4}{13}$
- D.  $\frac{9}{71}$

24. Compute  $\frac{(10002^2 - 9998^2)}{8}$

(hint:  $a^2 - b^2 = (a+b)(a-b)$  )

- A. 5000
- B. 10000
- C. 80000
- D. 26000

25. If angle C is 3 times angle A and angle B is 2 times angle A. The three angles are:

- A.  $A=90^\circ$ ;  $B=60^\circ$ ;  $C=30^\circ$
- B.  $A=30^\circ$ ;  $B=90^\circ$ ;  $C=60^\circ$
- C.  $A=30^\circ$ ;  $B=30^\circ$ ;  $C=120^\circ$
- D.  $A=30^\circ$ ;  $B=60^\circ$ ;  $C=90^\circ$