M-UA.350: Math

Practice Exam

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Total: 100 points

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1. A farmer has a rectangular field measuring 150 meters by 200 meters. He wants to divide the field into smaller square plots, all of the same size, with the largest possible side length. What is the side length of each square plot, and how many plots will he have?

2. Solve the following system of equations: 2x + 3y = 7 and x - y = 1. Show your work and clearly state the values of x and y.

3. Calculate the volume of a right circular cone with a radius of 5 cm and a height of 12 cm. Use the formula V = (1/3)< +&,Â v†W&R b –2 F†R föÇVÖRÂ " is the radius, and h is the height. Round your answer to the nearest cubic centimeter.

4. A bakery sells cookies for $2.50 per dozen and brownies for $3.00 per half-dozen. If a customer buys 3 dozen cookies and 2 half-dozen brownies, what is the total cost of their purchase?

5. What is the slope of the line passing through the points (2, 5) and (6, 17)? Show your calculations.

6. A train travels at a speed of 80 kilometers per hour for 2 hours and 30 minutes. How far does the train travel in this time?

7. Find the area of a trapezoid with bases of length 8 cm and 12 cm, and a height of 5 cm. Use the formula A = (1/2)(b1 + b2)h, where A is the area, b1 and b2 are the lengths of the bases, and h is the height.

8. Simplify the following algebraic expression: 3(x + 2) - 2(x - 5).

9. A bag contains 5 red marbles, 3 blue marbles, and 2 green marbles. If a marble is drawn at random, what is the probability that it is either red or blue?

10. John invests $1000 in an account that earns 5% simple interest per year. How much money will be in the account after 3 years?