

Domain: Expressions and Equations

Item: MC

1 When $\frac{5}{8}x + 1\frac{1}{3}$ is subtracted from $1\frac{1}{4}x - 5\frac{1}{6}$, the result is

A $\frac{5}{8}x - 3\frac{5}{6}$

B $\frac{5}{8}x - 6\frac{1}{2}$

C $-\frac{5}{8}x + 3\frac{5}{6}$

D $-\frac{5}{8}x + 6\frac{1}{2}$

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2 Which expression below is equivalent to $\frac{4}{3}x + 4\frac{2}{3}$?

A $\frac{4}{3}(x + 2)$

B $\frac{1}{3}(4x + 6)$

C $\frac{2}{3}(2x + 4)$

D $\frac{2}{3}(2x + 7)$

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3 At a discount furniture store, Chris offered a salesperson \$600 for a couch and a chair. The offer includes the 8% sales tax. If the salesperson accepts the offer, what would be the price of the furniture, to the *nearest dollar*, before tax?

A \$552

B \$556

C \$592

D \$648

4. The picture will be hung on a wall where the distance from the floor to ceiling is 8 feet. The center of the picture must be $5\frac{1}{4}$ feet from the floor. Determine the distance from the ceiling to the top of the picture frame.

Picture Width is 24in, Height is 28 in

Show your work.

5

Mandy's monthly earnings consist of a fixed salary of \$2800 and an 18% commission on all her monthly sales. To cover her planned expenses, Mandy needs to earn an income of at least \$6400 this month.

Part A: Write an inequality that, when solved, will give the amount of sales Mandy needs to cover her planned expenses.

Answer: _____

Part B: Graph the solution of the inequality on the number line.



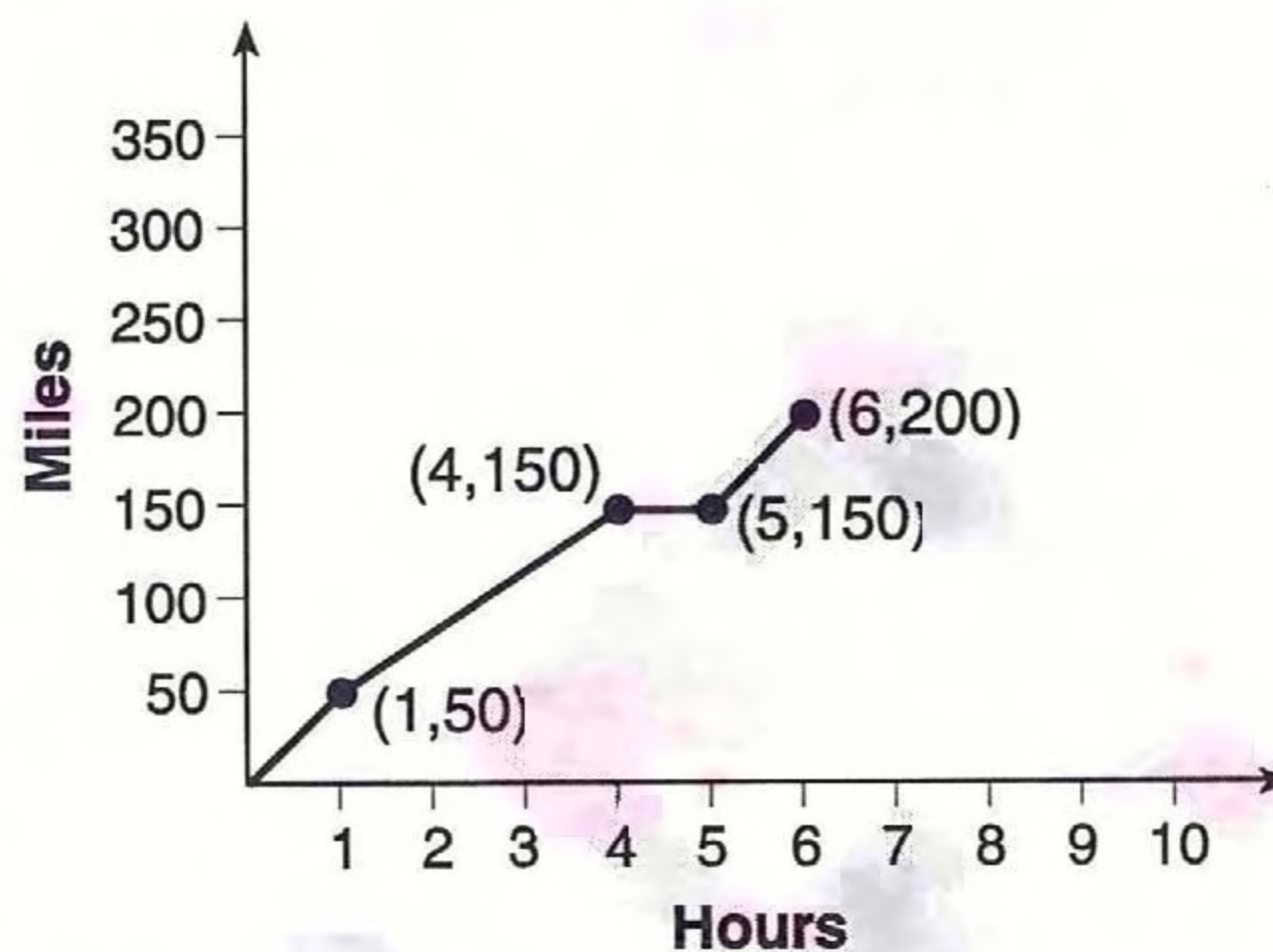
6

Appliances at Discount City Store are on sale for 70% of the original price. Eli has a coupon for an 18% discount on the sale price. If the original price of a microwave oven is \$500, how much will Eli pay for the oven before tax?

- A \$440
- B \$287
- C \$260
- D \$240

7

Last summer, a family took a trip to a beach that was about 200 miles away from their home. The graph below shows the distance driven, in miles, and the time, in hours, taken for the trip.



What was their average speed from hour 1 to hour 4?

- A 25 miles per hour
- B $33\frac{1}{3}$ miles per hour
- C $66\frac{2}{3}$ miles per hour
- D 100 miles per hour

8 The numerical expression $\frac{5}{6} - \frac{2}{3}\left(6 - \frac{1}{2}\right) + \frac{3}{4}$ is equal to

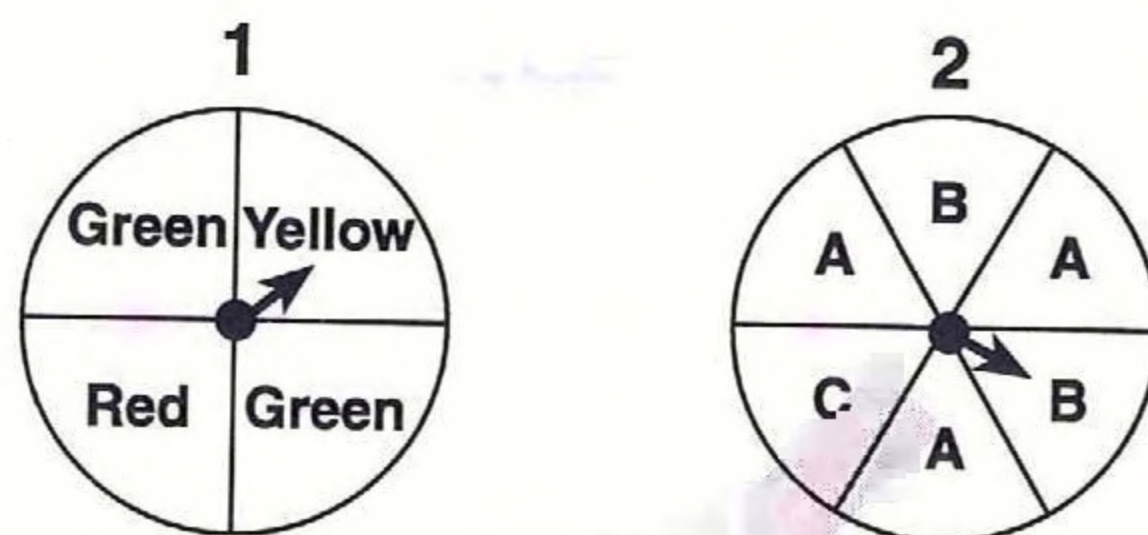
- A $-\frac{25}{12}$
- B $-\frac{17}{12}$
- C $\frac{20}{12}$
- D $\frac{43}{12}$

9

When John bought his new computer, he purchased an online computer help service. The help service has a yearly fee of \$25.50 and a \$10.50 charge for each help session a person uses. If John can only spend \$170 for the computer help this year, what is the maximum number of help sessions he can use this year?

10

During an experiment, the two spinners below will be spun.



Represent the sample space for this experiment. How many of these outcomes consist of a green and an A?

11

A scale drawing for a construction project uses a scale of 1 inch = 4 feet. The dimensions of the rectangular family room on the scale drawing are 7.5 inches by 12 inches.

What will be the actual area of the floor of the family room after the construction project is completed?

- A 90 square feet
- B 156 square feet
- C 360 square feet
- D 1440 square feet

12

During an experiment, three coins were tossed once.

Part A: Give the sample space to show all possible outcomes for tossing three coins one time, using the letter H when a coin faces "heads" up, and the letter T when it faces "tails" up.

Part B: Based on your answer to part A, how many outcomes consist of 3 heads or 3 tails?

Part C: During a math class, each of 24 students tossed three coins once. Based on your answer to part B, how many students would you expect to get a result of 3 heads or 3 tails?

Show your work.

13

While on vacation, a group can rent bicycles and scooters by the week. They get a reduced rental rate if they rent 5 bicycles for every 2 scooters rented. The reduced rate per bicycle is \$15.50 per week and the reduced rate per scooter is \$160 per week. The sales tax on each rental is 12%.

The group has \$1600 available to spend on bicycle and scooter rentals. What is the greatest number of bicycles and the greatest number of scooters the group can rent if the ratio of bicycles to scooters is 5:2?

Show Your Work.

14

David is making his own strawberry yogurt. In David's mixture, the number of strawberries is proportional to the amount of milk, in cups. David uses 4 cups of milk for every 14 strawberries in his mixture.

Which equation represents the relationship between s , the number of strawberries, and m , the number of cups of milk he uses?

A $s = \frac{1}{10}m$

B $s = \frac{7}{2}m$

C $s = \frac{2}{5}m$

D $s = \frac{9}{2}m$