

1. (2 points)

What is $\frac{8}{9}$ times the reciprocal of $\frac{4}{5}$?

2. (2 points)

A = the number of fourths in $\frac{9}{12}$

B = the number of thirds in $\frac{3}{6}$

What is $A + B - \frac{2}{7}$?

3. (2 points)

Evaluate $8 \times 5 + 3 \div 4 - (6 \times 2) - 23$.

4. (2 points)

After finally getting his driver license, Rohith is deciding what kind of car he wants. There are two types of engines, 5 types of exterior colors, and 3 types of interior colors to choose from. In how many ways can he customize his new car such that he can have one engine, one exterior body colour, and one interior body colour?

5. (3 points)

In a rectangle with sides lengths 3 units by 4 units, calculate:

A = the perimeter of the rectangle

B = The area of the rectangle

Find: $\frac{B}{A} - \frac{3}{7} + \frac{8}{3}$.

6. (3 points)

The Rickards math club is fundraising for the Invitational. Individually, Anvitha raised 10 dollars, Cherry raised 15 dollars, and Chanda raised 7 more dollars than Anvitha. How much did all the three raise for the invite?

7. (3 points)

On the way to school one morning Ahad notices that there are 3 flowers on the school lawn. The next morning he notices that there are now 6 flowers on the lawn. On the third morning there are 12. Assuming that this pattern continues, how many flowers should Ahad expect to see on the 7th day ?

8. (3 points)

A square has a side length of 7. By how much does its area decrease if the side lengths are reduced to 4? The answer to this multiplied by 6, plus 4, divided by 7, rounded to the nearest hundredth is the answer to this question.

9. (4 points)

If 1 gold coin is worth 2 silver coins and 4 silver coins is worth 8 bronze coins, then how many bronze coins are 10 gold coins worth?

10. (4 points)

A = the remainder of 85 when divided by 11

B = $\frac{A}{4}$

C = the area of a square with side length 2

Find $\frac{B}{A} + C$.

11. (4 points)

Every month you talk on the phone for exactly 11 hours. You are planning on changing your phone plan for the start of 2016. There are many phone plans that you can choose from.

- Plan A : 5 dollar flat fee plus an extra 5 dollars for every hour you spend talking
 Plan B : 6 dollar flat fee plus an extra 10 dollars for every hour you spend talking
 Plan C : 4 dollar flat fee plus an extra 6 dollars for every hour you spend talking
 Plan D : 5 dollar flat fee plus an extra 6 dollars for every hour you spend talking

If you only have 68 dollars to spend on your phone bill every month, then which of the above plans can you afford to buy?

12. (4 points)

How many numbers in between 1 and 100 are divisible by 7?

13. (5 points)

Siddharth has 5 dollars. He goes to the fair and rides four rides for 50 cents each and with the remaining money he buys 2 slices of pizza. After coming home from the fair he still has 1 dollar left. Let

A = the price of each pizza

B = the number of dollars he had left after he bought the first slice of pizza

C = the amount of money he has, in dollars, left after the next day, when he buys 7 pieces of candy for 5 cents each with the remaining 1 dollar

Find $(A + B) \times C$.

14. (5 points)

$$A : 18 \times 18 = 324$$

$$B : 17 \times 16 = 272$$

$$C : 19 \times 18 = 342$$

$$D : 18 \times 14 = 262$$

$$E : 16 \times 19 = 314$$

$$F : 14 \times 19 = 266$$

Which of the letters above have correct equations?

15. (5 points)

$$A = \frac{2}{3} \text{ of } \frac{4}{5}$$

B = the area of a square with side length 5

C = the area of a rectangle with side lengths 7 and 2

D = the next term in the sequence $\frac{1}{8}, \frac{3}{8}, \frac{5}{8}, \dots$

Find $A(B) - C(D)$.