

1. **(2 points)**

Simplify: $644 \div ((13 + 33) \times 7)$.

2. **(2 points)**

Kyle loves to play Vayne, a videogame character, and is trying to earn mastery points. It takes him 2 hours to gain one mastery point, but he loses one after not playing for a day. If Kyle plays 4 hours every other day, then how long will it take him, in days, to earn 6 mastery points?

3. **(2 points)**

Sanoor loves to spend money on games. If Sanoor wants to buy every single Zed skin in a game, how much money will he need if there are 3 Zed skins and each one costs \$7.53?

4. **(2 points)**

Let:

$$A = 12 + 10 + 8 + 6 + 2$$

$$B = 169 - 12 \times 17$$

$$C = 3 + 17 \times 3 - 6$$

$$D = ((21 + 126) \div 3) - 49$$

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

5. **(3 points)**

Simplify: $\frac{1}{2} \times \frac{1}{3} \times \frac{1}{4} \times \frac{5}{6} \times \frac{1}{8} \times 1152$.

6. **(3 points)**

Moots loves to sleep. For every 3 hours that Moots sleeps, he can only be awake for 20 minutes. If he needs to be awake to play a game for 5 hours and 40 minutes, then how long, in hours, should he sleep?

7. **(3 points)**

Sairam went grocery shopping to buy some milk. Each gallon of milk costs \$2, and he bought 6 gallons. If the sales tax was 10%, and he had a 20% off coupon, then how much money did Sairom spend on the milk? Assume that the 20% discount is applied first, and then the 10% sales tax is applied after.

8. **(3 points)**

Jawad loves to make chicken samosas. The samosas are triangles and Jawad needs to know their area to make them. Find the area of a samosa in centimeters squared if the base of the triangle is $(12 \times 3) \div 4$ centimeters and the height of the triangle is $(15 \div 3) \times 2$.

9. **(4 points)**

Sri loves his friends and wants to give hugs to all his friends. He gives $(2 \times 3)^3$ hugs to each of his 4 friends. How many hugs did he give in total?

10. **(4 points)**

Simplify and round to the nearest thousandth: $(12.06 + 7.39) \times 2.69 + 33$.

11. **(4 points)**

Dr. Hall is a brilliant baker and loves making cookies. In each of her oatmeal raisin cookies she puts precisely 13 raisins in them. A bag of raisins costs \$3.00 and contains 773 raisins. If Dr. Hall bakes 1546 cookies, then how much money did she spend on bags of raisins?

12. **(4 points)**

Find the sum of the mean, median, and range of the following data set: $\{1, 2, 4, 3, 2, 5, 4, 3, 2, 1, 2, 3, 4, 2, 1, 2, 4, 3, 2, 0\}$.

13. (5 points)

Chuy loves eating chewy bars. He buys a box of chocolate, peanut butter, and strawberry chewy bars with 30 bars in total. There are 15 chocolate bars and 10 peanut butter bars. When he gets home, he randomly chooses a bar to eat.

Let:

A = the probability that Chuy will eat a chocolate bar

B = the probability that Chuy will eat a peanut butter bar,
if there was a packaging error and there were 2 less
chocolate bars, and 3 less strawberry bars in the box

C = the probability that Chuy will eat a strawberry bar, if
he threw away all the peanut butter bars before choosing a bar

Find: $A + B - C$. Give your answer as an improper fraction.

14. (5 points)

Kurt wants to make a pokeball, ultraball, and a masterball. He needs to find the volume of all the balls in order to create them. (Hint: The volume of a sphere is equal to $\frac{4}{3} \times \pi \times r^3$)

Let:

P = the volume of the pokeball, if its diameter is 6

U = the volume of the ultraball, if its radius is $(144 \div 3) - 42$

M = the volume of the masterball, if its radius is $(3 \times 12) \div 4$

Find $P + U + M$. Give your answer in terms of π .

15. (5 points)

The Rickards High School MA Θ Club is divided into League players and non-League players. Last year, two out of the 40 members were League players. This year, 7 non-League players graduated and left the club, 8 League players joined the club, 1 non-League player started playing League, and 14 non-League members joined the club. What is the change in percentage of League players in the club? Give your answer as a percentage.