

Equations Project

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Introduction: Today we are going to be solving equations and writing equations using the knowledge we know including real numbers and properties of equality.

Equation-statement that the values of two mathematical expressions are equal

Problem 1 (solving equations)

1. $4X = \frac{2}{5}$ You are going to use the multiplication property of equality of dividing 4 on both sides.
2. $X = \frac{2}{5} \cdot \frac{1}{4}$ Now you are going to use the "multiplicative" inverse.
3. $X = \frac{2}{5} * \frac{1}{4}$ Now you multiply.
4. $X = \frac{2}{20}$ Now you simplify
5. $X = \frac{1}{10}$ That is the answer $\frac{1}{10}$

Problem 2 (solving equations)

1. $X - \frac{1}{4} = \frac{2}{5}$ You need to get numbers on one side and the variable on another side.
2. $X = \frac{2}{5} + \frac{1}{4}$ We added $\frac{1}{4}$ on both sides
3. $X = \frac{8}{20} + \frac{5}{20}$ We got the common denominator which is 20
4. $X = \frac{13}{20}$ We added $\frac{8}{20}$ and $\frac{5}{20}$ and got $\frac{13}{20}$. You add the numerator and the denominator stays the same.

Problem 3 (solving equations)

1. $15 - \frac{2}{3}x = 20$ You need to get numbers on one side and the variable on another side.
2. $-\frac{2}{3}x = 5$ We subtracted 15 on both sides.
3. $\frac{3}{2} * \frac{2}{3}x = 5 * \frac{3}{2}$ We need to use the multiplicative inverse
4. $x = \frac{5}{1} * \frac{3}{2}$ you multiply
5. $x = -\frac{15}{2}$ you now need to make it a proper fraction
6. $x = -7 \frac{1}{2}$ Answer

Problem 4 (solving equations)

1. $5 - 2(x - 3) = -23$ You need to get numbers on one side and the variable on another side.
2. $5 - 2x - 6 = -23$ Then you use Distributive Property
3. $2x - 1 = -23$ We added 5 and -6
4. $2x = -22$ We add 1 to both sides
5. $x = -11$

Problem 5 pt1 (writing equations)

Bill needs to rent a 2015 LTZ suburban. Company A is going to charge a weekly fee of \$600 and a fee of 25 cents per mile. Company B is going to charge a weekly fee of \$500 and a fee of 75 cents per mile. How many miles will Bill need to travel for both companies to be the same?

Problem 5 pt2 (writing equations)

1.

$$600 + .25x = 500 + .75x$$

Problem 5 pt3 (writing equations)

1. $600 + .25x = 500 + .75x$ You need to get all the numbers on one side and all the variables on one side.
2. $100 + .25x = .75x$ I used the “subtraction property of equality” by subtracting 500 from both sides.
3. $100 = .50x$ Again I used the “subtraction property of equality” by subtracting .25 from both sides.
4. $x = 200$ The answer would be 200 miles because you divide .50 from both sides.

The

End