Linear equation worksheet word problems

I'm not robot!

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Example: Solve

$$\frac{6x^2 + 13x - 4}{2x + 5} = \frac{12x^2 + 5x - 2}{4x + 3}$$

Solution: We have,

$$\frac{6x^2 + 13x - 4}{2x + 5} = \frac{12x^2 + 5x - 2}{4x + 3}$$

$\Rightarrow \ (6x^2 + 13x - 4)(4x + 3) = (12x^2 + 5x - 2)(2x + 5)$ [By cross-multiplication]

$\Rightarrow \ (6x^2 + 13x - 4) \times 4x + (6x^2 + 13x - 4) \times 3 = (12x^2 + 5x - 2) \times 2x + (12x^2 + 5x - 2) \times 5$

$\Rightarrow \ 24x^3 + 52x^2 - 16x + 18x^2 + 39x - 12 = 24x^3 + 10x^2 - 4x + 60x^2 + 25x - 10$

$\Rightarrow \ 24x^3 + 70x^2 + 23x - 12 = 24x^3 + 70x^2 + 21x - 10$

$\Rightarrow \ 24x^3 + 70x^2 + 23x - 24x^3 - 70x^2 - 21x = -10 + 12$

$\Rightarrow \ x = 1$

Hence, $x = 1$ is the solution of the given equation.

Example: Solve : $\dfrac{4x + 17}{18} - \dfrac{13x - 2}{17x - 32} + \dfrac{x}{3} = \dfrac{7x}{12} - \dfrac{x + 16}{36}$

Solution: We have, $\dfrac{4x + 17}{18} - \dfrac{13x - 2}{17x - 32} + \dfrac{x}{3} = \dfrac{7x}{12} - \dfrac{x + 16}{36}$

$\Rightarrow \ \dfrac{4x + 17}{18} - \dfrac{7x}{12} + \dfrac{x + 16}{36} + \dfrac{x}{3} = \dfrac{13x - 2}{17x - 32}$

Multiplying both sides by 36 i.e., the LCM of 18, 12, 36 and 3, we get

$\Rightarrow \ 36 \times \dfrac{4x + 17}{18} - 36 \times \dfrac{7x}{12} + 36 \times \dfrac{x + 16}{36} + 36 \times \dfrac{x}{3} = 36 \times \left(\dfrac{13x - 2}{17x - 32} \right)$

$\Rightarrow \ 2(4x + 17) - 3 \times 7x + x + 16 + 12x = 36 \times \left(\dfrac{13x - 2}{17x - 32} \right)$

$\Rightarrow \ 8x + 34 - 21x + x + 16 + 12x = 36 \times \left(\dfrac{13x - 2}{17x - 32} \right)$

$\Rightarrow \ 50 = 36 \times \left(\dfrac{13x - 2}{17x - 32} \right)$ [By cross-multiplication]

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Simple Algebra Word Problems - Answers

Name _____   AWP4-2

Write an equation for each situation.

1. Marilyn wanted 20 tickets to the play. $\underline{20 - t = 6}$
   Her mother gave her *t* tickets. She needs
   6 more.

2. Chef Paul made 5 apple pies for a party. $\underline{5 \times s = 30}$
   Each pie was cut into *s* slices. The 30 guests,
   including the host, ate one slice each.

3. Laura planted 8 strawberry plants. She $\underline{13 - 8 = s}$
   needed *s* more plants to finish the row.
   Each row had space for 13 plants

4. Ms Car's classroom had 24 students $\underline{24 - x = 5}$
   enrolled. There were *x* chairs in the room.
   Five students had to stand.

5. The new movie was 2 hours long. The $\underline{2 + m = 2\,½}$
   bonus film of bloopers added *m* minutes.
   The total time spent watching the films
   was 2 ½ hours .

6. Timothy had 60 fireballs for his friends. $\underline{60 \div 5 = n}$
   Each of his *n* friends would receive 5 fire-
   balls.

1. On Wednesday you saw 12 robins on one tree and 7 on another tree. How many robins did you see altogether?

2. Your friends just gave you 12 sparkle markers, now you have 19! How many did you have before your friends gave you 12 more?

3. You picked 8 flowers and your friend picked 17 flowers. How many more flowers did your friend pick?

4. You have 17 birthday gifts! 9 came from your family, the rest came from your friends. How many gifts did your friends give you?

5. You saved 17 dimes and your brother saved 8 dimes. How many more dimes did you save?

6. Today is May 4th and your birthday is on May 21st, how many more days until your birthday?

7. In your class today, only 18 of the 26 students were at school. How many were absent?

Find the Slope and Y-intercept for Each Equation

1) $-5x + 4y = -16$ slope = _____

   y-intercept = _____

2) $y = \frac{5}{2}x - 4$ slope = _____

   y-intercept = _____

3) $2x + 9y = 18$ slope = _____

   y-intercept = _____

4) $-x + 4y = -16$ slope = _____

   y-intercept = _____

5) $y = \frac{1}{2}x - 1$ slope = _____

   y-intercept = _____

6) $-6x + 5y = -10$ slope = _____

   y-intercept = _____

7) $y = -\frac{7}{5}x - 3$ slope = _____

   y-intercept = _____

8) $-3x + 2y = 6$ slope = _____

   y-intercept = _____

9) $y = \frac{3}{2}x + 3$ slope = _____

   y-intercept = _____

10) $y = \frac{7}{4}x - 3$ slope = _____

   y-intercept = _____

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Answer:

Let the common ratio between the numbers of notes of different denominations be x.

Therefore, numbers of Rs 100 notes, Rs 50 notes, and Rs 10 notes will be $2x$, $3x$, and $5x$ respectively.

Amount of Rs 100 notes = Rs $(100 \times 2x)$ = Rs $200x$

Amount of Rs 50 notes = Rs $(50 \times 3x)$ = Rs $150x$

Amount of Rs 10 notes = Rs $(10 \times 5x)$ = Rs $50x$

It is given that total amount is Rs 400000.

∴ $200x + 150x + 50x = 400000$

⇒ $400x = 400000$

On dividing both sides by 400, we obtain

$x = 1000$

Number of Rs 100 notes = $2x$ = 2×1000 = 2000

Number of Rs 50 notes = $3x$ = 3×1000 = 3000

Number of Rs 10 notes = $5x$ = 5×1000 = 5000

Question 15:

I have a total of Rs 300 in coins of denomination Re 1, Rs 2 and Rs 5. The number of Rs 2 coins is 3 times the number of Rs 5 coins. The total number of coins is 160.

How many coins of each denomination are with me?

Answer:

Let the number of Rs 5 coins be x.

Number of Rs 2 coins = 3 × Number of Rs 5 coins = $3x$

Number of Re 1 coins = 160 − (Number of coins of Rs 5 and of Rs 2)

= 160 − $(3x + x)$ = 160 − $4x$

Amount of Re 1 coins = Rs $[1 \times (160 − 4x)]$ = Rs $(160 − 4x)$

Amount of Rs 2 coins = Rs $(2 \times 3x)$ = Rs $6x$

Amount of Rs 5 coins = Rs $(5 \times x)$ = Rs $5x$

It is given that the total amount is Rs 300.

∴ $160 − 4x + 6x + 5x = 300$

$160 + 7x = 300$

System of linear equation word problems worksheet. Writing linear equation word problems worksheet. Linear equation word problems worksheet with answers. Linear equation word problems worksheet grade 9. Linear equation word problems worksheet. Graphing linear equation word problems worksheet. Linear equation word problems worksheet pdf. Interpreting linear equation word problems worksheet.

In worksheet on word problems on linear equation in one variable student can practice different types of equation problems.1. Convert the following statements into equations. (a) 5 added to a number is 9. (b) 3 subtracted from a number is equal to 12. (c) 5 times a number decreased by 2 is 4. (d) 2 times the sum of the number x and 7 is 13. 2. A number is 12 more than the other. Find the numbers if their sum is 48. 3. Twice the number decreased by 22 is 48. Find the number. 4. Seven times the number is 36 less than 10 times the number. Find the number. 5. 4/5 of a number is more than 3/4 of the number by 5 . Find the number. 6. The sum of two consecutive even numbers is 38. Find the numbers. 7. The sum of three consecutive odd numbers is 51. Find the numbers. 8. Rene is 6 years older than her younger sister. After 1 0 years, the sum of their ages will be 50 years. Find their present ages. 9. The length of a rectangle is 10 m more than its breadth. If the perimeter of rectangle is 80 m, find the dimensions of the rectangle. 10. A 300 m long wire is used to fence a rectangular plot whose length is twice its width. Find the length and breadth of the plot. 11. The denominator of a fraction is greater than the numerator by 8. If the numerator is increased by 17 and denominator is decreased by 1, the number obtained is 3/2, find the fraction. 12. A sum of $2700 is to be given in the form of 8 fees. If the prize of either $100 or $25, find the number of prizes of each type. 13. In a class of 42 students, the number of boys is 2/5 of the girls. Find the number of boys and girls in the class. 14. Among the two supplementary angles, the measure of the larger angle is 36° more than the measure of smaller. Find their measures. 15. My mother is 12 years more than twice my age. After 8 years, my mother's age will be 20 years less than three times my age. Find my age and my mother's age. 16. In an isosceles triangle, the base angles are equal and the vertex angle is 80°. Find the measure of the base angles. 17. Adman's father is 49 years old. He is 5 years older than four times Adman's age. What is Adman's age? 18. The cost of a pencil is 25 cents more than the cost of an eraser. If the cost of 8 pencils and 10 erasers is $12.80, find the cost of each. 19. Divide 36 into two parts in such a way that 1/5 of one part is equal to 1/7 of the other. 20. The length of the rectangle exceeds its breadth by 3 cm. If the length and breadth are each increased by 2 cm, then the area of new rectangle will be 70 sq. cm more than that of the given rectangle. Find the length and breadth of the given rectangle. Answers for worksheet on word problems on linear equation in one variable are given below so that student can check the exact answers of the equation problems. Answers: 1. (a) x + 5 = 9 (b) x - 3 = 12 (c) 5x - 2 = 4 (d) 2(x + 7) = 13 2. 18, 30 3. 35 4. 12 5. 100 6. 18, 20 7. 15, 17, 19 8. 12, 18 years 9. 15 cm, 25 cm 10. 50 m, 100 m 11. 13/21 12. 15, 48 13. 30 girls, 12 boys 14. 72°, 108° 15. 16 years, 44 years 16. 50° 17. 11 years 18. eraser - 60 cents, pencil – 85 cents 19. 15, 21 20. length = 18 m, breadth = 15 m ● EquationsWhat is an Equation?What is a Linear Equation?How to Solve Linear Equations?Solving Linear EquationsProblems on Linear Equations in One VariableWord Problems on Linear Equations in One VariablePractice Test on Linear EquationsPractice Test on Word Problems on Linear Equations● Equations - WorksheetsWorksheet on Linear EquationsWorksheet on Word Problems on Linear Equation 7th Grade Math Problems8th Grade Math Practice From Worksheet on Word Problems on Linear Equation to HOME PAGE Didn't find what you were looking for? Or want to know more information about Math Only Math. Use this Google Search to find what you need. Share this page: What's this? Math worksheets and visual curriculum Problem 1 :The sum of three consecutive multiples of 8 is 888. Find the multiples.Problem 2 :The ages of John and David are in the ratio 5 : 7. Four years later the sum of their ages will be 56 years. What are their present ages ?Problem 3 :The number of boys and girls in a class are in the ratio 7 : 5. The number of boys is 8 more than the number of girls. What is the total class strength ?Problem 4 :Baichung's father is 26 years younger than Baichung's grandfather and 29 years older than Baichung. The sum of the ages of all the three is 135 years. What is the age of each one of them?Problem 5 :The organizers of an essay competition decide that a winner in the competition gets a prize of $100 and a participant who does not win gets a prize of $25. The total prize money distributed is $3000. Find the number of winners, if the total number of participants is 63. Solutions Problem 1 :The sum of three consecutive multiples of 8 is 888. Find the multiples.Solution :Let the three consecutive multiples of 8 be x, (x + 8) and (x + 16):The sum of three consecutive multiples of 8 is 888.Then, we have + (x + 8) + (x + 16) = 8883x + 24 = 888Subtract 24 from each side.3x = 864Divide each side by 24. x = 288Then, x + 8 = 288 + 8 = 296x + 16 = 288 + 16 = 304So, the three consecutive multiples of 8 are 288, 296, and 304.Problem 2 :The ages of John and David are in the ratio 5 : 7. Four years later the sum of their ages will be 56 years. What are their present ages ?Solution :The ages of John and David are in the ratio 5 : 7.Then, the present ages of John and David are 5x and 7xGiven : Four years later the sum of their ages will be 56 years.Then, we have (5x + 4) + (7x + 4) = 56Simplify and solve for x. 12x = 48Divide each side by 12.x = 4Age of John is5x = 5(4)5x = 20Age of David is 7x = 7(4)7x = 28So, the present ages of John and David are 20 years and 28 years respectively. Problem 3 :The number of boys and girls in a class are in the ratio 7 : 5. The number of boys is 8 more than the number of girls. What is the total class strength ?Solution :Given : The number of boys and girls in a class are in the ratio 7 : 5.Then,Number of boys = 7xNumber of girls = 5xGiven : The number of boys is 8 more than the number of girls.Then, we have 7x = 5x + 8Subtract 5x from each side. 2x = 8Divide each side by 2.x = 4Number of boys is7x = 7(4)7x = 28Number of girls is5x = 5(4)5x = 20Total number of students in the class is = 28 + 20= 48So, the total class strength is 48. Problem 4 :Baichung's father is 26 years younger than Baichung's grandfather and 29 years older than Baichung. The sum of the ages of all the three is 135 years. What is the age of each one of them?Solution : Let x be the age Baichung's father.Then,Age of Baichung = x - 29Age of Baichung's grandfather = x + 26Given : The sum of the ages of all the three is 135 years. Then, we havex + (x - 29) + (x + 26) = 1353x - 3 = 135Add 3 to each side.3x = 138Divide each side by 3. x = 46Age of Baichung's father is 46 years. x - 29 = 46 - 29 = 17Age of Baichung is 20 years. x + 26 = 46 + 26 = 72Age of Baichung's grand father is 72 years. Problem 5 :The organizers of an essay competition decide that a winner in the competition gets a prize of $100 and a participant who does not win gets a prize of $25. The total prize money distributed is $3000. Find the number of winners, if the total number of participants is 63.Solution :Let be the number of winners.Then, the number of participants do not win is (63 - x). Given : Winner gets $100, loser gets $25 and total prize money distributed is $3000. Then, we have 100x + 25(63 - x) = 3000100x + 1575 - 25x = 300075x + 1575 = 300075x = 1425Divide each side by 75.x = 19So, the number of winners is 19. Apart from the stuff given in this section, if you need any other stuff in math, please use our google custom search here. 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