

Show all your work to receive full credit.

Problems 1-5 are worth 6 points each.

1. Write the fraction $\frac{7}{3}$ as a decimal.

2. Use the distributive property to expand the expression: $(7x - 30)\frac{1}{6}$

Evaluate and simplify the following expressions:

3. $\frac{7}{15} + \frac{5}{12}$

4. $-\left(-\frac{3}{2}\right)^3$

5. $-|-5.5 - 5|$

Problems 6-20 are worth 8 points each.

6. Evaluate $\frac{3}{4}x - 5$ for $x = -\frac{7}{3}$.

7. 35 is 20% of which number?

8. Solve the following inequality and graph the solution on the number line:
 $5x - 3 < 12$.



Perform the indicated operations and simplify each of the following expressions:

9. $8y^2 - 7y + 12 - 14y^2 + 6y - 4$

10. $-4(5y + 7) + 3(3y - 7)$

11. $8 \div 2 + 6^2$

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12. The formula $T = 0.2C$ is used for computing a 20% tip T in a restaurant for a meal that costs C dollars. Find the tip for a meal costing \$28.

Solve each of the following equations. If an equation has no solution, or an infinite number of solutions, state so.

13. $-6y + 2 = 7y + 6$

14. $\frac{5}{6}y + \frac{1}{2} = \frac{11}{2}$

15. $(2x - 3) + 2(4x + 6) = 4x - 3$

16. $5.16 - 2.34x = 3x - 1.515$

17. $-4(x + 3) + x = 3(x + 2) - 18 - 6x$

18. The quotient of a number and 4, decreased by 2, is equal to 35. Find the number.

Define a variable and use it in an equation to answer each of the following questions. Show all steps in the solutions and label your answers.

19. The length of a banquet table is 3 feet longer than 6 times its width. If the perimeter is 76 feet, what are the dimensions of the table?

Variable: _____

Equation: _____

Solve:

Answer: _____

20. As a last minute deal, Don and Mary booked a 7-day cruise for a total of \$603. If the normal price for a couple is \$1340, what discount percent did Don and Mary receive?

Variable: _____

Equation: _____

Solve:

Answer: _____

EXTRA CREDIT. Each problem is worth 5 points.

1. How much principal should be invested in a savings account paying 5% simple interest if you want to earn \$464 interest in 2 years?

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2. How many cups of pure water should be mixed with 9.5 cups of a 70% acid solution to dilute it into a 5% acid solution?

Answers

1. $2.\bar{3}$ or 2.333...

2. $\frac{7}{6}x - 5$

3. $\frac{53}{60}$

4. $\frac{27}{8}$

5. -10.5

6. $-\frac{27}{4}$

7. 175

8. $x < 3$

9. $-6y^2 - y + 8$

10. $-11y - 49$

11. 40

12. \$5.60

13. $y = -\frac{4}{13}$

14. $y = 6$

15. $x = -2$

16. $x = 1.25$

17. infinitely many solutions

18. 148

19. Width is 5 feet, length is 33 feet.

20. 55%

Extra Credit 1) \$4640.00

Extra Credit 2) 123.5 cups

