

ITF and Algebra 1

Evaluate each expression.

1) $2 - (-7)$

2) $3 + (-3)$

3) $(-5) - (-5)$

4) $3 - (-4) - (-2)$

5) $1 - 3 + 2$

6) $(-5) - 6 - (-6)$

7) $(-3) - 2 - 2 - (-7)$

8) $(-7) - (-2) - (-7) + 8$

9) $6 + (-1) + (-3) - (-8)$

10) $\frac{1}{5} + \left(-\frac{9}{5}\right)$

11) $\left(-1\frac{5}{8}\right) + \frac{5}{4}$

12) $\left(-\frac{5}{3}\right) - \left(-2\frac{3}{8}\right)$

13) $\left(-\frac{3}{2}\right) - \left(-\frac{7}{8}\right) + \left(-3\frac{1}{7}\right)$

$$14) \left(-1\frac{3}{5}\right) + \frac{3}{2} + \left(-\frac{1}{2}\right)$$

$$15) \left(-\frac{3}{4}\right) + \left(-\frac{9}{5}\right) + \left(-\frac{9}{5}\right)$$

$$16) 1.5 - 2.68$$

$$17) (-2.5) + (-3.8)$$

$$18) (-4.5) + 2.3$$

$$19) (-7.7) + (-3.7) + 3.4$$

$$20) 0.5 + (-0.2) + 4.2$$

$$21) 8 + (-1.1) + 5$$

$$22) (-6.4) - 6.7 + 4.2 - 4.91$$

$$23) (-5.7) + (-8) - (-0.6) - (-3.5)$$

$$24) (-7.2) - (-3.1) + (-4.1) - (-7.2)$$

Find each quotient.

$$25) \frac{-10}{5}$$

$$26) \frac{27}{-9}$$

$$27) \frac{-100}{-10}$$

$$28) \frac{4\frac{4}{9}}{\frac{1}{3}}$$

$$29) \frac{4\frac{1}{2}}{-\frac{1}{2}}$$

$$30) \frac{-\frac{1}{8}}{\frac{1}{10}}$$

$$31) \frac{-3.5}{0.4}$$

$$32) \frac{-2.6}{-2.5}$$

$$33) \frac{-0.685}{4}$$

Find each product.

$$34) (-7)(4)$$

$$35) (-3)(-9)$$

$$36) (3)(-8)$$

$$37) \left(\frac{4}{3}\right)\left(-\frac{13}{10}\right)$$

$$38) \left(\frac{7}{8}\right)\left(-\frac{4}{3}\right)$$

$$39) \left(8\frac{2}{5}\right)\left(-\frac{9}{8}\right)$$

40) $(-8.7)(-2.6)$

41) $(0.2)(-8.3)$

42) $(-9.8)(-7.89)$

Solve each equation.

43) $-2n + n = -6$

44) $-20 = 6x - x$

45) $5a + 4a = 18$

46) $108 = 4 + 8(x + 5)$

47) $228 = -4(8k + 7)$

48) $-8(5x + 2) = 304$

49) $77 = 7(-3 + 4v) + 7(6 - 8v)$

50) $58 = 2(2 - 3v) + 3(-3v + 8)$

51) $-4(3k + 3) - 8(6k - 4) = 20$

52) $\frac{1}{5}x + \frac{6}{5}x = -\frac{91}{30}$

53) $\frac{2}{5}x + \frac{4}{5}x = \frac{18}{25}$

54) $-11 = -\frac{11}{3}x - 2 - \frac{5}{3}$

55) $2r + r = -3r + 3r - 12$

56) $n + 4n = 4n - 5$

$$57) -6n = -n - 5n$$

$$58) -18 - 6b = 6(3 - 3b)$$

$$59) 8 + p = 2(-4p - 5)$$

$$60) -2(-6r + 2) = 28 + 4r$$

$$61) 2(p - 2) - 4(1 + 2p) = 3p + 2 - 4p$$

$$62) -2(-5k + 4) - 6(3k + 3) = -8k - 5$$

$$63) 3(1 + 4n) + 3 = 3(3n - 6)$$

$$64) 6(6.5x + 7) = -231$$

$$65) 129.192 = 4.2(7.4 + 3.2n)$$

$$66) 105.8 = 7.1 - 4.7(2.3n - 2.6)$$

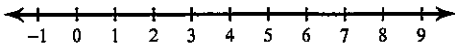
$$67) 7.1 + 3.1(0.2a - 5.2) = -14.844 - 1.2a$$

$$68) 6.5(5.3k + 2.3) = 12.165 + 6.6k$$

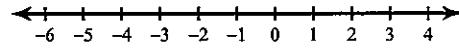
$$69) 7.236 + 0.191r = -5.6r - 1.6(1 - 5r)$$

Solve each inequality and graph its solution.

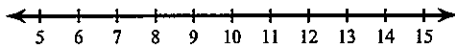
70) $3(6p - 1) \geq 123$



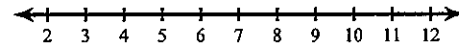
71) $-90 < -6(-3p + 3)$



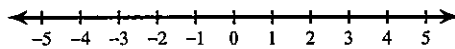
72) $-2(1 + 8k) + 2k < -100$



73) $6x + 2(5x + 1) > 130$



74) $84 < 7(4 + 8x)$



Solve each proportion.

75) $\frac{n}{48} = \frac{15}{6}$

76) $\frac{10}{x} = \frac{34}{28}$

77) $\frac{30}{5} = \frac{k}{41}$

78) $\frac{8}{17} = \frac{38}{m}$

79) $\frac{6}{v} = \frac{16}{24}$

80) $\frac{13}{31} = \frac{k - 48}{37}$

$$81) \frac{28}{33} = \frac{23}{n-26}$$

$$82) \frac{31}{22} = \frac{26}{n-21}$$

$$83) \frac{n-36}{6} = \frac{32}{40}$$

$$84) \frac{x+9}{43} = \frac{14}{25}$$

$$85) \frac{43}{x} = \frac{3}{x+50}$$

$$86) \frac{k-20}{26} = \frac{5k}{50}$$

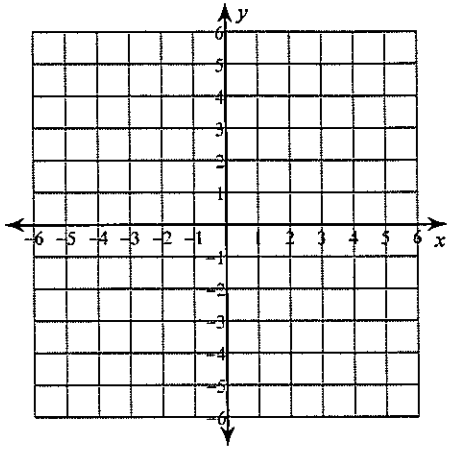
$$87) \frac{n}{n-45} = \frac{4}{19}$$

$$88) \frac{2}{29} = \frac{x-20}{x}$$

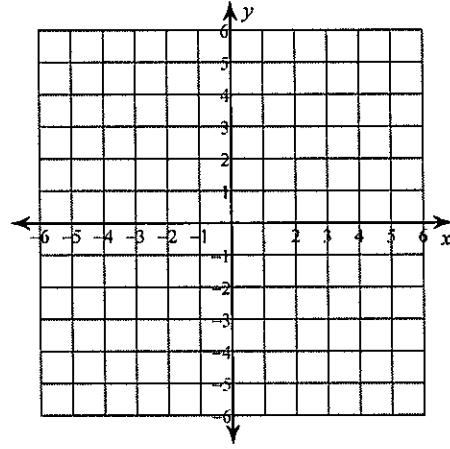
$$89) \frac{a}{26} = \frac{a-33}{3}$$

Sketch the graph of each line.

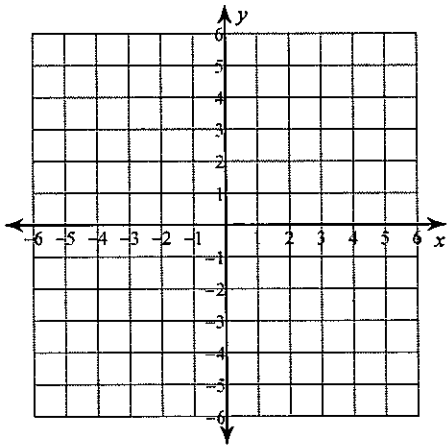
90) $y = \frac{1}{3}x$



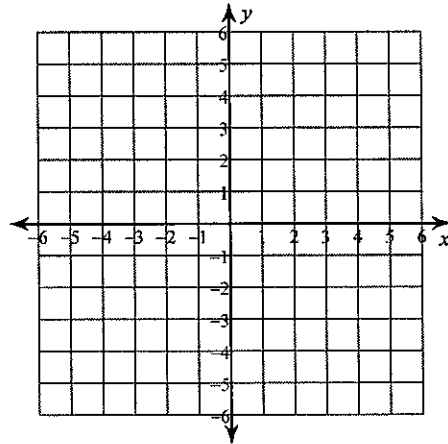
91) $y = -\frac{5}{2}x + 5$



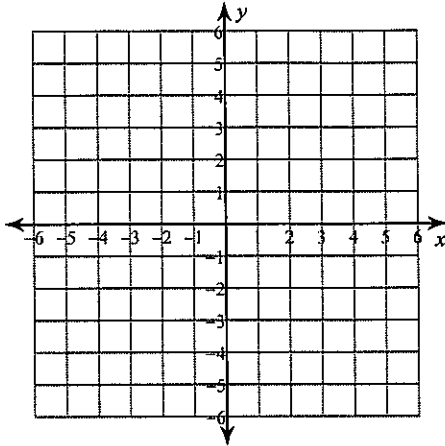
92) $y = \frac{1}{4}x + 1$



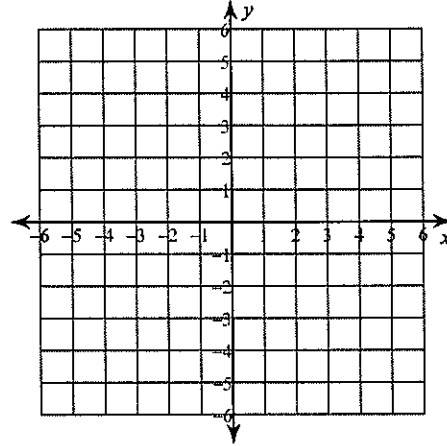
93) $5x - y = -3$



94) $3x - y = -2$

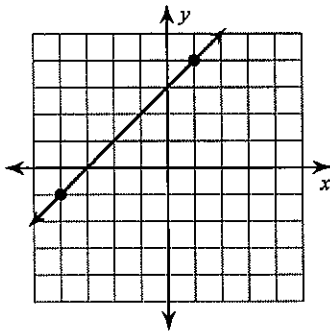


95) $x + y = -3$

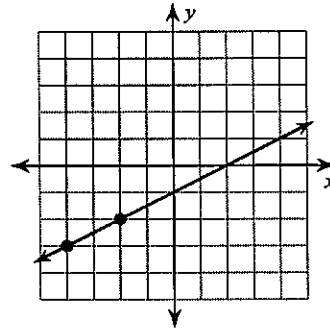


Find the slope of each line.

96)



97)



Find the slope of the line through each pair of points.

98) $(8, -9), (7, -5)$

99) $(19, -13), (17, -4)$

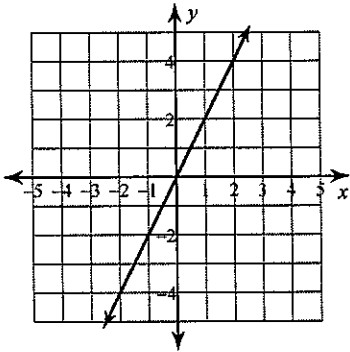
Find the slope of each line.

100) $y = -8x + 3$

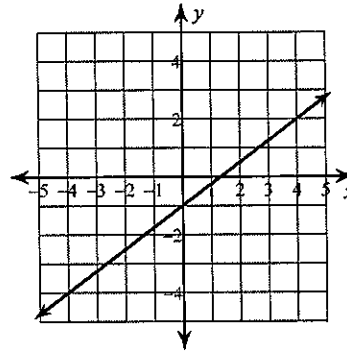
101) $y = 4x + 4$

Write the slope-intercept form of the equation of each line.

102)



103)



Write the slope-intercept form of the equation of each line given the slope and y-intercept.

104) Slope = 5, y-intercept = 0

105) Slope = $\frac{5}{3}$, y-intercept = 1

Write the slope-intercept form of the equation of each line.

106) $5x + y = -2$

107) $x - 4y = 20$

Write the slope-intercept form of the equation of the line through the given points.

108) through: (2, -1) and (0, -4)

109) through: (0, -3) and (2, -4)

110) through: (0, -4) and (-1, 1)

111) through: (3, -3) and (0, 2)

112) through: (0, -1) and (3, -4)

Answers to ITF and Algebra 1

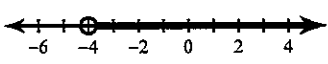
- | | | | |
|----------------------------------|--------------------|-----------------------|------------------------------------|
| 1) 9 | 2) 0 | 3) 0 | 4) 9 |
| 5) 0 | 6) -5 | 7) 0 | 8) 10 |
| 9) 10 | 10) $-\frac{8}{5}$ | 11) $-\frac{3}{8}$ | 12) $\frac{17}{24}$ |
| 13) $-\frac{211}{56}$ | 14) $-\frac{3}{5}$ | 15) $-\frac{87}{20}$ | 16) -1.18 |
| 17) -6.3 | 18) -2.2 | 19) -8 | 20) 4.5 |
| 21) 11.9 | 22) -13.81 | 23) -9.6 | 24) -1 |
| 25) -2 | 26) -3 | 27) 10 | 28) $\frac{40}{3}$ |
| 29) -9 | 30) $-\frac{5}{4}$ | 31) -8.75 | 32) 1.04 |
| 33) -0.17125 | 34) -28 | 35) 27 | 36) -24 |
| 37) $-\frac{26}{15}$ | 38) $-\frac{7}{6}$ | 39) $-\frac{189}{20}$ | 40) 22.62 |
| 41) -1.66 | 42) 77.322 | 43) {6} | 44) {-4} |
| 45) {2} | 46) {8} | 47) {-8} | 48) {-8} |
| 49) {-2} | 50) {-2} | 51) {0} | 52) $\left\{-\frac{13}{6}\right\}$ |
| 53) $\left\{\frac{3}{5}\right\}$ | 54) {2} | 55) {-4} | 56) {-5} |

57) { All real numbers. } 58) {3}

60) {4} 61) {-2} 59) {-2} 62) No solution. 63) {-8}

64) {-7} 65) {7.3} 66) {-8} 67) {-3.2}

68) $\left\{-\frac{1}{10}\right\}$ 69) {4} 70) $p \geq 7$: 

71) $p > -4$: 

72) $k > 7$: 

73) $x > 8$: 

74) $x > 1$: 

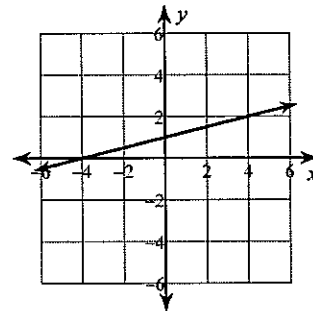
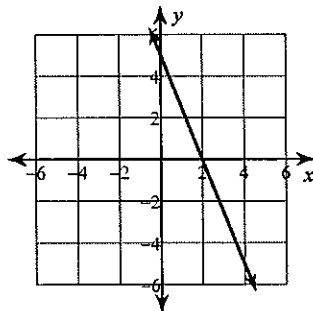
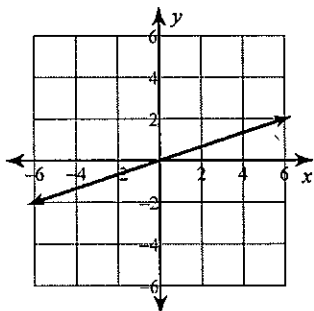
75) {120} 76) {8.24} 77) {246} 78) {80.75}

79) {9} 80) {63.52} 81) {53.11} 82) {39.45}

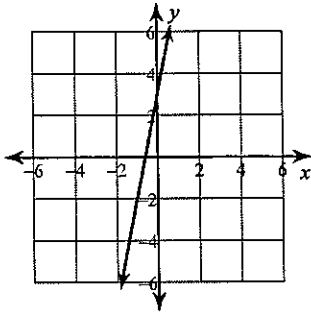
83) {40.8} 84) {15.08} 85) {-53.75} 86) {-12.5}

87) {-12} 88) {21.48} 89) {37.3}

90) 91) 92)



93)



96) 1

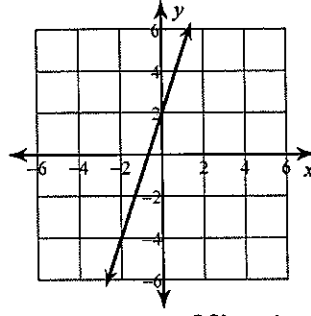
100) -8

104) $y = 5x$

108) $y = \frac{3}{2}x - 4$

112) $y = -x - 1$

94)



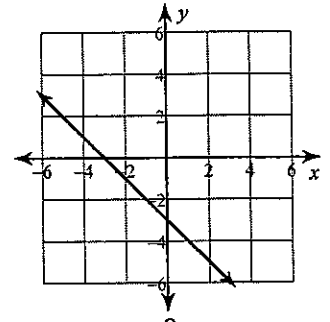
97) $\frac{1}{2}$

101) 4

105) $y = \frac{5}{3}x + 1$

109) $y = -\frac{1}{2}x - 3$

95)



99) $-\frac{9}{2}$

103) $y = \frac{3}{4}x - 1$

107) $y = \frac{1}{4}x - 5$

111) $y = -\frac{5}{3}x + 2$

98) -4

102) $y = 2x$

106) $y = -5x - 2$

110) $y = -5x - 4$

Unit Rate Word Problems with Complex Fractions

Name: _____ Date: _____ Period: _____

Find the unit rate for each problem. Show all of your work.

1. If Mark uses $3\frac{3}{4}$ tablespoons of coffee to make 10 cups of coffee, how much would he need to make one cup of coffee?
2. The drama club ordered 15 pizzas for the cast party. If the 25 members ate $12\frac{1}{2}$ pizzas out of the 15. How much pizza did each cast member eat?
3. Brianna's Chocolate Chip Cookie recipe will make about 3 dozen chocolate chip cookies. The recipe calls for $2\frac{1}{4}$ cups of flour and $\frac{3}{8}$ cups of baking soda. If Brianna was to adjust the recipe to include 1 cup of baking soda, how many cups of flour would she need to use?
4. A standard bathtub holds 70 gallons of water. On average it takes $7\frac{1}{2}$ minutes to drain a bathtub. How many gallons of water go down the drain each minute?
5. Mackenzie ran the Olympic marathon of $26\frac{1}{5}$ miles in a time of $5\frac{4}{5}$ hours. How far did she run in 1 hour?
6. Pedro grew $4\frac{1}{3}$ inches during a $3\frac{1}{2}$ month growth spurt. If his growth spurt continued at the same rate how much did he grow in one month?
7. During one winter snow storm in Denver, Colorado, Jesse noted that 16 inches of snow fell in $5\frac{1}{3}$ hours. What was the rate of snowfall in one hour?
8. Tiana's car traveled 111 miles on $\frac{3}{8}$ of a tank of gas. How far will she be able to go on a full tank of gas?
9. Joey entered a hot dog eating competition. He ate $30\frac{1}{2}$ hot dogs in $3\frac{3}{4}$ minutes. How many hot dogs did he eat in one minute?
10. Andre took a trip from Boston, Massachusetts to Paris, France. The plane flew $3,669\frac{4}{5}$ miles in $6\frac{2}{3}$ hours. How far had the plane traveled in 1 hour?

Unit Rate Word Problems with Complex Fractions Answers

1.) $3\frac{3}{4} \div 10 = \frac{3}{8}$ tablespoons of coffee

2.) $12\frac{1}{2} \div 25 = \frac{1}{2}$ a pizza per person

3.) $2\frac{1}{4} \div \frac{3}{8} = 6$ cups of flour per cup of baking soda

4.) $70 \div 7\frac{1}{2} = 9\frac{1}{3}$ gallons per minute

5.) $26\frac{1}{5} \div 5\frac{4}{5} = 4\frac{15}{29}$ miles per hour

6.) $4\frac{1}{3} \div 3\frac{1}{2} = \frac{5}{21}$ inches in one month

7.) $16 \div 5\frac{1}{3} = 3$ inches per hour

8.) $111 \div \frac{3}{8} = 296$ miles to a tank

9.) $30\frac{1}{2} \div 3\frac{3}{4} = 8\frac{2}{15}$ hotdogs per minute

10.) $3669\frac{4}{5} \div 6\frac{2}{3} = 550\frac{47}{100}$ miles per hour