

## 10.2 Notes

### Proportions

- Proportions are just two equal ratios
- We get proportions by cross multiplying
  - o Cross multiplying is multiplying the top of one fraction with the bottom of the other and vice versa

#### EXAMPLE 1

$$\frac{3}{4} = \frac{x}{8}$$

- Cross multiply to get  $4x = 24$
- Solve for x by dividing by 4
- Final answer is  $x = 6$

#### EXAMPLE 2

$$\frac{3}{5} = \frac{x}{7}$$

- Cross multiply to get  $5x = 21$
- Solve for x to get  $x = \frac{21}{5}$
- Make it a proper fraction by dividing 5 into 21
- 4 and  $\frac{1}{5}$  is the final answer

#### EXAMPLE 3

$$\frac{5}{6} = \frac{x}{10}$$

- Cross multiply to get  $6x = 50$
- Solve for x.  $x = \frac{50}{6}$
- Reduce  $\rightarrow$  8 and  $\frac{1}{3}$

#### EXAMPLE 4

$$\frac{7}{8} = \frac{x}{9}$$

- Cross multiply  $\rightarrow 8x = 63$
- $x = \frac{63}{8} \rightarrow 7$  and  $\frac{5}{8}$

#### EXAMPLE 5

$$\frac{2}{3} = \frac{x}{10}$$

- $3x = 20$
- $x = \frac{20}{3}$
- $x = 6$  and  $\frac{2}{3}$

HOMEWORK- book page 253 questions 6-30

## 10.3 Notes

### Percentages, Fractions, and Decimals

- To change a percent to a fraction, you take the number and put it over 100.
  - o Reduce if possible

#### EXAMPLES

$$50\% \rightarrow 50/100 \rightarrow \frac{1}{2}$$

$$30\% \rightarrow 30/100 \rightarrow 3/10$$

$$40\% \rightarrow 40/100 \rightarrow 4/10 \rightarrow 2/5$$

$$400\% \rightarrow 400/100 \rightarrow 4$$

- To change a fraction into a decimal  $\rightarrow$  you move decimal to the left 2 places

#### EXAMPLES

$$35\% \rightarrow .35$$

$$47\% \rightarrow .47$$

$$50\% \rightarrow .5$$

$$7\% \rightarrow .07$$

HOMEWORK- book page 257 questions 6-23 and 36-47

## 10.4 Notes

### Percentages, Fractions and Decimals Part 2

- To change a fraction into a percentage, you divide the bottom number into the top.

#### EXAMPLES

$$3/4 \rightarrow 75\%$$

$$4/5 \rightarrow 80\%$$

$$2/3 \rightarrow 66.6\%$$

- To change a decimal into a fraction, just move the decimal to the right two places

EXAMPLES

.4 → 40%

.72 → 72%

.3333333 → 33.3 %

HOMEWORK- book page 259 questions 7-42

This concludes our book work for the year so your last assignment is the final review worksheet. This worksheet is large. It contains information on chapters 1-9. No chapter 10 material is on there. This is a review of the whole year. Feel free to use your book or notes from the year to help you fill this out.

The last thing is your final exam.

Name \_\_\_\_\_

Final Exam Practice, Pre-

Algebra

Perform the operation on the fractions and write the answer in simplest form. (30)

1.  $\frac{1}{5} + \frac{1}{5}$

\_\_\_\_\_

2.  $\frac{3}{8} - \frac{1}{8}$

\_\_\_\_\_

3.  $\frac{7}{12} - \frac{1}{12}$

\_\_\_\_\_

4.  $\frac{5}{6} - \frac{1}{3}$

\_\_\_\_\_

5.  $\frac{4}{9} - \frac{1}{3}$

\_\_\_\_\_

6.  $\frac{1}{4} + \frac{1}{3}$

\_\_\_\_\_

7.  $\frac{3}{4} + \frac{1}{2}$

---

8.  $1\frac{1}{2} + 2\frac{5}{6}$

---

9.  $2\frac{2}{3} - 1\frac{1}{2}$

---

10.  $3\frac{1}{6} - 1\frac{1}{3}$

---

11.  $2\frac{1}{4} + 4\frac{1}{3}$

---

12.  $5\frac{1}{2} - 4\frac{3}{5}$

---

13.  $\frac{1}{4} \cdot \frac{3}{7}$

---

14.  $\frac{1}{2} \cdot \frac{2}{5}$

---

15.  $\frac{1234}{5678} \cdot \frac{5678}{1234}$

---

16.  $\frac{5}{9} \div \frac{1}{3}$

---

17.  $1234 \frac{567}{890} \div 1234 \frac{567}{890}$

---

18.  $\frac{3}{4} \div \frac{5}{12}$

---

19.  $2 \frac{1}{4} \cdot 2 \frac{2}{3}$

---

20.  $3 \frac{1}{3} \cdot 1 \frac{1}{2}$

---

21.  $5 \div 1 \frac{2}{3}$

---

22.  $1 \frac{2}{3} \div 1 \frac{1}{4}$

---

23.  $1\frac{3}{5} \div 1\frac{8}{10}$

---

24.  $3\frac{2}{3} \cdot 1\frac{1}{2}$

---

25.  $6\frac{1}{2} \div 5$

---

**Perform the operation on the decimals.**

26.  $.63 + .28$

---

27.  $.26 + .837$

---

28.  $4.37 + 10.9816$

---

29.  $15.43 + 46.6$

---

30.  $2.97 - 1.18$

---

31.  $6.16 - 3.5$

---

32.  $32.35 - 23.678$

---

33.  $.042 - .00899$

---

34.  $.4 \times .6$

---

35.  $.8 \times .09$

---

36.  $.457 \times 1000$

---

37.  $.48 \times .18$

---

38.  $.57 \times 1000$

---

39.  $1.5 \times 1.8$

---

40.  $.25 \times .45$

---

41.  $.02 \times .03$

---



42.  $.94 \times 22$

---

43.  $.12 \div 6$

---

44.  $78.8 \div 100$

---

45.  $.987654321 \div .987654321$

---

46.  $.42 \div 7$

---

47.  $.378 \div 1.8$

---

48.  $6.5 \div 2.5$

---

49.  $1.86 \div .62$

---

50.  $138 \div .69$

---

Name \_\_\_\_\_

**Algebra**

**Perform the operation on the integers.**

51.  $(+1) + (+2)$

\_\_\_\_\_

52.  $(-2) + (-2)$

\_\_\_\_\_

53.  $(-3) + (+8)$

\_\_\_\_\_

54.  $(+4) + (-3)$

\_\_\_\_\_

55.  $(+5) + (+8)$

\_\_\_\_\_

56.  $(-6) + (-2)$

\_\_\_\_\_

57.  $(-7) + (+2)$

\_\_\_\_\_

58.  $(-7) - (+6)$

\_\_\_\_\_

59.  $(+8) - (-2)$

\_\_\_\_\_

60.  $(+9) - (+9)$

\_\_\_\_\_

61.  $(-8) - (-8)$

\_\_\_\_\_

62.  $(-7) - (+2)$

\_\_\_\_\_

63.  $(+6) - (-5)$

\_\_\_\_\_

64.  $(+5) - (+7)$

\_\_\_\_\_

65.  $(-4) - (-2)$

\_\_\_\_\_

66.  $(+3) \times (+3)$

\_\_\_\_\_

67.  $(-2) \times (-3)$

\_\_\_\_\_

68.  $(-1) \times (+6)$

\_\_\_\_\_

69.  $(+2) \times (-7)$

\_\_\_\_\_

70.  $(+3) \times (+5)$

\_\_\_\_\_

71.  $(-4) \times (-2)$

\_\_\_\_\_

72.  $(-5) \times (+8)$

\_\_\_\_\_

73.  $(+6) \div (+3)$

\_\_\_\_\_

74.  $(-24) \div (-3)$

\_\_\_\_\_

75.  $(-24) \div (+4)$

\_\_\_\_\_

76.  $(+3) \div (-3)$

\_\_\_\_\_

77.  $(+45) \div (+5)$

\_\_\_\_\_

78.  $(-18) / (-2)$

---

79.  $(-48) / (+8)$

---

80.  $(+48) / (-12)$

---

**Solve the equation.**

81.  $x + 1 = 5$

---

82.  $x - 6 = 6$

---

83.  $x - 7 = -9$

---

84.  $x + 8 = 3$

---

85.  $x + 5 = -9$

---

86.  $x - 3 = 8$

---

87.  $-4 = x + 8$

---

88.  $5x = 25$

---

89.  $-6x = 12$

---

90.  $4x = -14$

---

91.  $6x = 32$

---

92.  $x/2 = 7$

---

93.  $x/2 = -8$

---

94.  $x/-4 = -9$

---

95.  $5x + 5 = 30$

---

96.  $-6x + 6 = -12$

---

97.  $-3x - 8 = -16$

---

98.  $7x + 4 = 9$

\_\_\_\_\_

99.  $x/3 - 1 = 8$

\_\_\_\_\_

100.  $x/-2 - 7 = -10$

\_\_\_\_\_

101. **What are like terms?**

\_\_\_\_\_

**Are these like terms? Answer Yes or No.**

102. -2, 9

\_\_\_\_\_

103.  $6y, 6x$

\_\_\_\_\_

104.  $-4x, 5x$

\_\_\_\_\_

**Combine like terms.**

105.  $5x + 6y + 7x + 8y$

\_\_\_\_\_

106.  $6x + 3 + 7$

\_\_\_\_\_

107.  $4x - 5y - 8x + 9y$

\_\_\_\_\_

108.  $3x + 2 - 3 + x$

\_\_\_\_\_

**Solve the like terms equation.**

109.  $2x + 3x = 20$

---

110.  $2x - 6x = 24$

---

111.  $6x + 2x = 30$

---

112.  $2x + 4x + 4 = 28$

---

113.  $-3x + 6x - 3 = -8$

---

114.  $-2x - 7x - 7 = -7$

---

115.  $5x - 8x + 14 = 5$

---

**Solve the equation with variables on both sides.**

116.  $7x = 6x + 4$

---

117.  $4x = 8 - 2x$

---

118.  $2x = 14 - 3x$

---

119.  $x = 41 + 7x$

---



120.  $8x - 7 = 2x + 9$



Name \_\_\_\_\_

Final Exam, Pre-Algebra

Perform the operation on the fractions and write the answer in simplest form. (30)

1.  $\frac{1}{3} + \frac{1}{3}$

\_\_\_\_\_

2.  $\frac{3}{4} - \frac{1}{4}$

\_\_\_\_\_

3.  $\frac{5}{12} - \frac{1}{12}$

\_\_\_\_\_

4.  $\frac{5}{6} - \frac{1}{2}$

\_\_\_\_\_

5.  $\frac{5}{9} - \frac{1}{3}$

\_\_\_\_\_

6.  $\frac{1}{2} + \frac{1}{3}$

\_\_\_\_\_

7.  $\frac{3}{4} + \frac{1}{5}$

---

8.  $1\frac{1}{3} + 2\frac{5}{6}$

---

9.  $2\frac{2}{3} - 1\frac{1}{4}$

---

10.  $3\frac{1}{6} - 1\frac{1}{2}$

---

11.  $2\frac{1}{2} + 4\frac{1}{3}$

---

12.  $5\frac{1}{2} - 4\frac{3}{8}$

---

13.  $\frac{1}{4} \cdot \frac{3}{5}$

---

14.  $\frac{1}{2} \cdot \frac{2}{3}$

---

15.  $\frac{1234}{5678} \cdot \frac{5678}{1234}$

---

16.  $\frac{5}{6} \div \frac{1}{3}$

---

17.  $1234 \frac{567}{890} \div 1234 \frac{567}{890}$

---

18.  $\frac{3}{4} \div \frac{5}{8}$

---

19.  $1 \frac{1}{4} \cdot 2 \frac{4}{5}$

---

20.  $3 \frac{1}{3} \cdot 1 \frac{1}{5}$

---

21.  $8 \div 2 \frac{2}{3}$

---

22.  $1 \frac{2}{3} \div 1 \frac{3}{5}$

---

23.  $3\frac{3}{5} \div 1\frac{8}{10}$

\_\_\_\_\_

24.  $3\frac{2}{3} \cdot 1\frac{7}{11}$

\_\_\_\_\_

25.  $6\frac{1}{2} \div 4$

\_\_\_\_\_

**Perform the operation on the decimals.**

26.  $.48 + .28$

\_\_\_\_\_

27.  $.49 + .837$

\_\_\_\_\_

28.  $4.82 + 10.9804$

\_\_\_\_\_

29.  $65.43 + 56.2$

\_\_\_\_\_

30.  $2.36 - 1.29$

\_\_\_\_\_

31.  $4.16 - 3.8$

---

32.  $32.35 - 23.469$

---

33.  $.072 - .00989$

---

34.  $.4 \times .3$

---

35.  $.8 \times .02$

---

36.  $.53 \times 1000$

---

37.  $.48 \times .28$

---

38.  $.72 \times 1000$

---

39.  $1.4 \times 1.2$

---

40.  $.25 \times .85$

---

41.  $.02 \times .04$

---

42.  $.94 \times 98$

---

43.  $.12 \div 4$

---

44.  $34.8 \div 100$

---

45.  $.987654321 \div .987654321$

---

46.  $.49 \div 7$

---

47.  $.396 \div 1.8$

---

48.  $4.5 \div 2.5$

---

49.  $1.89 \div .63$

---

50.  $134 \div .67$

---



Name \_\_\_\_\_

Final Exam, Pre-Algebra

Perform the operation on the integers.

51.  $(+7) + (+2)$

\_\_\_\_\_

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53.  $(-3) + (+8)$

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54.  $(+3) + (-3)$

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55.  $(+4) + (+8)$

\_\_\_\_\_

56.  $(-2) + (-2)$

\_\_\_\_\_

57.  $(-9) + (+2)$

\_\_\_\_\_

58.  $(-6) - (+6)$

\_\_\_\_\_

59.  $(+3) - (-2)$

\_\_\_\_\_

60.  $(+2) - (+9)$

\_\_\_\_\_

61.  $(-8) - (-8)$

\_\_\_\_\_

62.  $(-5) - (+2)$

\_\_\_\_\_

63.  $(+3) - (-5)$

\_\_\_\_\_

64.  $(+6) - (+7)$

\_\_\_\_\_

65.  $(-8) - (-2)$

\_\_\_\_\_

66.  $(+3) \times (+3)$

\_\_\_\_\_

67.  $(-8) \times (-3)$

\_\_\_\_\_

68.  $(-4) \times (+6)$

\_\_\_\_\_

69.  $(+7) \times (-7)$

\_\_\_\_\_

70.  $(+1) \times (+5)$

\_\_\_\_\_

71.  $(-4) \times (-2)$

\_\_\_\_\_

72.  $(-2) \times (+8)$

\_\_\_\_\_

73.  $(+3) \div (+3)$

\_\_\_\_\_

74.  $(-9) \div (-3)$

\_\_\_\_\_

75.  $(-24) \div (+6)$

\_\_\_\_\_

76.  $(+7) \div (-7)$

\_\_\_\_\_

77.  $(+15) / (+5)$

---

78.  $(-4) / (-2)$

---

79.  $(-32) / (+8)$

---

80.  $(+72) / (-12)$

---

**Solve the equation.**

81.  $x + 1 = 9$

---

82.  $x - 2 = 6$

---

83.  $x - 3 = -9$

---

84.  $x + 5 = 3$

---

85.  $x + 5 = -8$

---

86.  $x - 8 = 8$

---

87.  $-2 = x + 8$

---

88.  $5x = 10$

---

89.  $-6x = 6$

---

90.  $4x = -10$

---

91.  $6x = 28$

---

92.  $x/2 = 3$

---

93.  $x/2 = -7$

---

94.  $x/-4 = -6$

---

95.  $5x + 5 = 10$

---

96.  $-6x + 6 = 12$

---

97.  $-7x - 8 = -16$

---

98.  $9x + 4 = 9$

---

99.  $x/7 - 1 = 8$

---

100.  $x/5 - 7 = -10$

---

101. **What are like terms?**

---

**Are these like terms? Answer Yes or No.**

102. -2, 9

---

103.  $7y$ ,  $7x$

---

104.  $4x$ ,  $5x$

---

**Combine like terms.**

105.  $5x + 6y + 2x + 3y$

---

106.  $6x + 2 + 6$

---

107.  $2x - 6y - 8x + 9y$

---

108.  $3x + 1 - 7 + x$

---

**Solve the like terms equation.**

109.  $2x + 3x = 30$

---

110.  $2x - 6x = 28$

---

111.  $6x + 2x = 20$

---

112.  $2x + 5x + 4 = 18$

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113.  $-3x + 6x - 4 = -8$

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114.  $-2x - 7x - 4 = -4$

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115.  $5x - 8x + 8 = 5$

---

**Solve the equation with variables on both sides.**

116.  $7x = 6x + 8$

---

117.  $4x = 18 - 2x$

---

118.  $2x = 12 - 3x$

---

119.  $x = 25 + 7x$

---

120.  $8x - 5 = 6x + 9$

