

C. Multiplying and dividing decimals:

Multiplying decimals

example: $.3 \times .5 = .15$

example: $.3 \times .2 = .06$

example: $(.03)^2 = .0009$

31. $3.24 \times 10 =$

34. $5 \times 0.4 =$

32. $.01 \times .2 =$

35. $(.51)^2 =$

33. $(.04)^2 =$

Dividing decimals: Change the problem to an equivalent whole number problem by multiplying both numbers by the same power of 10:

example: $.3 \div .03$

Multiply both by 100 to get $30 \div 3 = 10$

example: $\frac{.014}{.07}$

Multiply both by 1000 to get $14 \div 70 = .2$

36. $.013 \div 100 =$

40. $\frac{7.20}{2.4} =$

37. $.053 \div .2 =$

41. $1.44 \div 2.4 =$

38. $\frac{340}{3.4} =$

42. $\frac{36.8}{10} =$

39. $\frac{8.4}{0.07} =$

Learning to Work with Decimals ... Set 2

Answers

31. 32.4

32. .002

33. .0016

34. 2

35. .2601

36. .00013

37. .265

38. 100

39. 120

40. 3

41. .6

42. 3.68

D. Percent:

Meaning: translate percent as hundredths:

example: 8% means 8 hundredths or .08 or

$$\frac{8}{100} = \frac{2}{25}$$

Percent-decimal conversion: To change a decimal to percent form, multiply by 100 (move the point 2 places right), write the percent symbol (%):

example: .075 = 7.5%

example: $1\frac{1}{4} = 1.25 = 125\%$

Problems 43-45: Write as a percent:

43. .3 = | 44. 4 = | 45. .085 =

To change a percent to decimal form, move the point 2 places left (divide by 100) and drop the % symbol:

example: 8.76% = .0876

example: 67% = .67

Learning to Work with Decimals ... Set 2

Answers

43. 30%

44. 400%

45. 8.5%

Learning to Work with Decimals ... Set 2

Problems 46-49: Write as a decimal:

$$46. 10\% = \quad \quad \quad | \quad 48. .03\% =$$

$$47. 136\% = \quad \quad \quad | \quad 49. 4\% =$$

Solving percent problems:

Step 1: Without changing the meaning, write the problems so it says “__ of __ is __”, and from this, identify a , b , and c :

$$\boxed{a \% \text{ of } b \text{ is } c}$$

Problems 50-52: Write in the form $a\%$ of b is c , and tell the values of a , b , and c :

$$50. 3\% \text{ of } 40 \text{ is } 1.2$$

$$51. 600 \text{ is } 150\% \text{ of } 400$$

$$52. 3 \text{ out of } 12 \text{ is } 25\%$$

Step 2: Given a and b , change $a\%$ to a decimal and multiply (“of” can be translated “multiply”). Or, given c and one of the others, divide c by the other (first change percent to decimal); if answer is a , write it as a percent:

Answers

46. .1

47. 1.36

48. .0003

49. .04

50. 3% of 40 is 1.2;

$$a = 3\%, b = 40, c = 1.2$$

51. 150% of 400 is 600;

$$a = 150\%, b = 400, c = 600$$

52. 25% of 12 is 3;

$$a = 25\%, b = 12, c = 3$$

Learning to Work with Decimals ... Set 2

example: What is 9.4% of \$5000?

Compare $a\%$ of b is c : 9.4% of \$5000 is ___?

Given a and b : multiply:

$$.094 \times \$5000 = \$470$$

example: 56 problems correct out of 80 is what percent?

Compare $a\%$ of b is c : ___% of 80 is 56?

Given c and other (b):

$$56 \div 80 = .7 = 70\%$$

example: 5610 people, which is 60% of the registered voters, vote in an election. How many are registered?

Compare $a\%$ of b is c : 60% of ___ is 5610?

Given c and other (a): $5610 \div .6 = 9350$

53. 4% of 9 is what?
54. What percent of 70 is 56?
55. 15% of what is 60?
56. What is 43% of 500?
57. 10 is what percent of 40?

Learning to Work with Decimals ... Set 2

Answers

53. .36

54. 80%

55. 400

56. 215

57. 25%

Learning to Work with Decimals ... Set 2

E. Estimation and approximation:

Rounding to one significant digit:

example: 3.67 rounds to 4

example: .0449 rounds to .04

example: 850 rounds to either 800 or 900

example: $\overline{.4} = .44444\dots$ rounds to .4

Problems 58-61: Round to one significant digit:

$$58. 45.01 \quad | \quad 60. .00083$$

$$59. 1.09 \quad | \quad 61. 0.\overline{5}$$

To estimate an answer, it is often sufficient to round each given number to one significant digit, then compute:

example: $.0298 \times .000513$ Round and compute:

$$.03 \times .0005 = .000015$$

.000015 is the estimate

Problems 62-66: Select the best approximation of the answer:

$$62. 1.2346825 \times 367.003246 = (4, 40, 400, 4000, 40000)$$

$$63. .0042210398 \div .01904982 = (.02, .2, .5, 5, 20, 50)$$

$$64. 101.7283507 + 3.14159265 = (2, 4, 98, 105, 400)$$

$$65. (4.36285903)^3 = (12, 64, 640, 5000, 12000)$$

$$66. 1.147 - 114.7 = (-100, -10, 0, 10, 100)$$

Learning to Work with Decimals ... Set 2

Answers

58. 50

59. 1

60. .0008

61. .6

62. 400

63. .2

64. 105

65. 64

66. -100

Learning to Work with Decimals ... Set 2

Word Problems:

Problems 67-69: A cassette which cost \$9.50 last year costs \$11 now.

67. What is the amount of the increase?
68. What percent of the original price is the increase?
69. What is the percent increase?

Problems 70-71: Jodi's weekly pay is \$89.20. She gets a 5% raise.

70. What will be her new weekly pay?
71. How much more will she get?

Problems 72-74: Sixty percent of those registered voted in the last election.

72. What fraction voted?
73. If there was 45,000 registered, how many voted?
74. If 33,000 voted, how many were registered?
75. A person weighs 125 pounds. Their ideal weight is 130 pounds. Their actual weight is what percent of their ideal weight?

Learning to Work with Decimals ... Set 2

Answers

67. \$1.50

68. $\approx 15.8\%$

69. $\approx 15.8\%$

70. \$93.66

71. \$4.46

72. $\frac{3}{5}$

73. 27,000

74. 55,000

75. $\approx 96\%$