

MATHEMATICS DEPARTMENT
Houston Community College – Southwest
MATH 0306 FINAL REVIEW PROBLEMS

Revised 3-23-10

These exercises represent a compilation of typical problems in this course. This is NOT a sample of the final exam. However, doing these problems will help you to prepare for the final exam. The instructions for the problems are followed by bracketed references to appropriate sections in the book.

Write expanded notation. [1.1]

1) 46,732

Write the number in words. [1.1]

2) 9,300,695

Subtract. [1.3]

3) $7758 - 3479$

Round as indicated. [1.4]

4) 1547 to the nearest hundred

5) 177,541 to the nearest thousand

Multiply. [1.5]

6) $(255)(91)$

Divide. [1.6]

7) $5252 \div 145$

Solve the problem. [1.3, 1.5, 1.6, 1.8]

8) Steve's company has to ship 120 engines. If a truck can hold 15 engines, how many truckloads are needed to ship all of the engines?

Simplify. [1.9, 2.2, 2.3]

9) $9 \cdot 2 + 7(7 - 4)$

10) $\{18 \div [8 - (3 + 2)]\}$

11) $-9 + 13 - 16 - (-17)$

Multiply. [2.4]

12) $2 \cdot (-4) \cdot 11 \cdot (-8)$

Divide, if possible. [2.5]

13) $-135 \div (-9)$

14) $\frac{0}{-3}$

15) $\frac{4^2 - 3}{25 - 5^2}$

Evaluate the algebraic expression. [2.6]

16) $-2x + y^2$ when $x = 4$ and $y = -3$

Multiply. [2.6]

17) $-9(x - 5 + 3y)$

Combine like terms. [2.7]

18) $7x^2 + 25x - 5y + 9 - 6x^2 - 23x - 4 - 3y$

Solve the equation. [2.8]

19) $2p + 3 = 23$

Determine whether the number is divisible by 2, 3, 5, 6, 9, and / or 10. [3.1]

20) 5874

Find the prime factorization of the number. [3.2]

21) 126

Find an equivalent expression, using the denominator indicated. [3.5]

22) $\frac{5}{8} = \frac{?}{32}$

Multiply and simplify. [3.4, 3.6]

23) $\left(-\frac{14}{5}\right)\left(-\frac{15}{28}\right)$

Solve the problem. [3.6]

24) There are 65 students in Jose's class. $\frac{4}{5}$ of the students are science majors. How many students are science majors?

Divide and simplify, if possible. [3.7]

25) $\left(\frac{9}{5}\right) \div \left(-\frac{1}{5}\right)$

Solve. [3.8]

26) $\frac{3}{5}x = \frac{-7}{15}$

Find the least common multiple of the set of numbers. [4.1]

27) 12, 20

Add and simplify, if possible. [4.2]

28) $\frac{1}{8} + \frac{1}{20} + \frac{2}{15}$

Replace the $\square$ with $>$ or $<$ in order to write a true sentence. [4.2]

29) $\frac{1}{3} \square \frac{2}{7}$

Subtract and simplify, if possible. [4.3]

30) $\frac{11}{21} - \frac{3}{35}$

Solve the equation. [4.4]

31) $\frac{3}{2} + \frac{5}{2}y = -6$

Add. Write a mixed numeral for the answer. [4.6]

$$\begin{array}{r} 32) \quad 12\frac{5}{9} \\ + \quad 16\frac{1}{4} \\ \hline \end{array}$$

Subtract. Write a mixed numeral for the answer. [4.6]

$$\begin{array}{r} 33) \quad 13 \\ - 6\frac{4}{7} \\ \hline \end{array}$$

$$\begin{array}{r} 34) \quad 14\frac{1}{8} \\ - 3\frac{3}{4} \\ \hline \end{array}$$

Multiply. Write a mixed numeral for the answer. [4.5, 4.7]

35) $2\frac{1}{6} \cdot \frac{3}{7}$

Divide. Write a mixed numeral for the answer. [4.5, 4.7]

36) $4\frac{1}{5} \div \left(-3\frac{3}{8}\right)$

Solve the problem. Write a mixed numeral for the answer. [4.7]

37) A car traveled 285 miles on $13\frac{4}{7}$ gallons of gas. How many miles per gallon did it get?

Arrange in order from smallest to largest. [5.1]

38) -3 , -3.02 , -3.2 , -5

Add. [5.2]

39) $179.4 + 0.81 + 21.65 + 95 + 4.7$

Subtract. [5.2]

40) $13.05 - 9.912$

Multiply. [5.3]

41)
$$\begin{array}{r} 0.0041 \\ \times \quad 7.2 \\ \hline \end{array}$$

Divide. [5.4]

42) $8.5572 \div 0.09$

Estimate by first rounding as directed. [5.6]

43) $21.325 + 0.582 + 79.99$; nearest tenth

Solve the equation. [5.7]

44) $0.06x + 0.02 = 0.62$

Find the exact answer. [5.8]

45) A truck rental company charges \$49 per day plus 39¢ per mile to rent a truck. What is the total bill if a truck is rented for 2 days and is driven 113 miles?

Solve the proportion. [6.1]

46) $\frac{2.4}{4} = \frac{x}{9}$

Find fraction notation and simplify. Then write the percent as an equivalent decimal. [6.2, 6.3]

47) 52%

Write the fraction as an equivalent percent. [6.3]

48) $\frac{4}{9}$

Solve the problem. Round to the nearest unit. [6.4, 6.5]

49) 65 is 40% of what?

Solve the problem. [6.6]

- 50) Last year, Maria earned \$367 per week. This year, her salary increased to \$392 per week. What is the percent of increase?
- 51) By switching service providers, a family's telephone bill decreased from about \$50 a month to about \$45. What was the percent of decrease?

Solve the problem. [6.7]

- 52) A kitchen table costs \$550. The sales tax is \$27.50. What is the sales tax rate?
- 53) What is the commission from the sale of \$720 worth of books, if the commission rate is 7%?

Solve the problem. Round your answer to the nearest cent. [6.7]

- 54) The regular price of a blanket is \$24.00. During a November sale, the blanket was selling for 35% off the regular price. What was the sale price of the blanket?

Find the simple interest. Round your answer to the nearest cent. [6.7]

- 55) Principal = \$2260
Rate = 10%
Time in months = 18

Solve the problem. Round your answer to the nearest cent. [6.7]

- 56) Brad invests \$2000 in an account paying 8% compounded annually. How much is in the account after 2 years?

Find any modes that exist. [7.1]

- 57) 20, 27, 46, 27, 49, 27, 49

Find the median. [7.1]

- 58) 6, 21, 11, 9, 25, 26

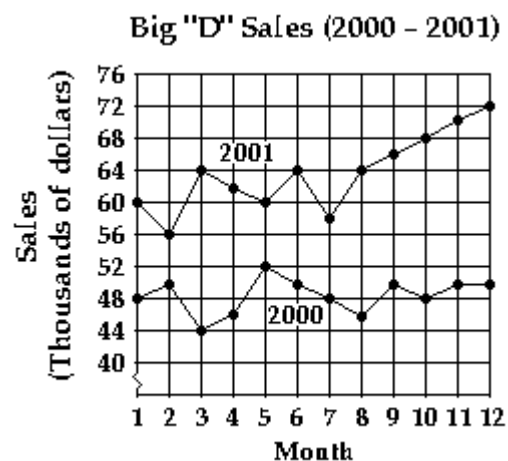
Use the pictograph to solve the problem. [7.2]

- 59) The following pictograph shows sales of compact disks (CDs) for a popular rock band for seven consecutive years.

Year	CD Sales
2002	⊙⊙
2001	⊙⊙⊙⊙⊙⊙
2000	⊙⊙⊙⊙⊙⊙⊙⊙
1999	⊙⊙⊙⊙⊙⊙⊙⊙⊙
1998	⊙⊙⊙⊙⊙
1997	⊙⊙⊙⊙⊙⊙⊙
1996	⊙⊙⊙
⊙ = 10,000 CDs	

How many more CDs were sold in year 2000 than in year 1998?

The following graph shows the monthly sales for Big "D" Sales during 2000 and 2001. Use the graph to solve the problem. [7.3]



- 60) Between which 2 months in 2000 was there the greatest increase in sales?
What was the amount of the increase?

Answer Key

Testname: MATH0306.FINAL.REVIEW.60.102

- 1) 4 ten thousands + 6 thousands + 7 hundreds + 3 tens + 2 ones
- 2) Nine million, three hundred thousand, six hundred ninety-five
- 3) 4279
- 4) 1500
- 5) 178,000
- 6) 23,205
- 7) 36 R 32
- 8) $120 \div 15 = 8$ truckloads
- 9) 39
- 10) 6
- 11) 5
- 12) 704
- 13) 15
- 14) 0
- 15) Undefined
- 16) 1
- 17) $-9x + 45 - 27y$
- 18) $x^2 + 2x - 8y + 5$
- 19) 10
- 20) 2, 3, 6
- 21) $2 \cdot 3 \cdot 3 \cdot 7$
- 22) $\frac{20}{32}$
- 23) $\frac{3}{2}$
- 24) 52
- 25) - 9
- 26) $-\frac{7}{9}$
- 27) 60
- 28) $\frac{37}{120}$
- 29) >
- 30) $\frac{46}{105}$
- 31) - 3
- 32) $28\frac{29}{36}$
- 33) $6\frac{3}{7}$
- 34) $10\frac{3}{8}$
- 35) $\frac{13}{14}$
- 36) $-1\frac{11}{45}$
- 37) 21 mpg

Answer Key

Testname: MATH0306.FINAL.REVIEW.60.102

38) -5, -3.2, -3.02, 3

39) 301.56

40) 3.138

41) 0.02952

42) 95.08

43) 101.9

44) 10

45) \$142.07

46) 5.4

47) $\frac{13}{25}$; 0.52

48) $44.\overline{4}\%$

49) 163

50) 6.8%

51) 10%

52) 5%

53) \$50.40

54) \$15.60

55) \$339.00

56) \$2332.80

57) 27

58) 16

59) 40,000

60) Between months 4 and 5;
\$6000