

Math 0300 Course Review

Perform the indicated operations:

- | | |
|--|---|
| 1) Change $9\frac{2}{5}$ to an improper fraction. | 2) Reduce $\frac{15}{35}$. |
| 3) The difference between 8 and 1.3254. | 4) $8.7 (0.056)$ |
| 5) $94 + 22 + 7 + 3452 + 115$ | 6) 908 less than 5416. |
| 7) $5.8 + 58 + 5.08 + 0.58 + 0.058$ | 8) $9.5 \overline{)1.254}$ |
| 9) $\left(\frac{13}{16}\right)\left(\frac{56}{39}\right)$ | 10) $36 \div \frac{2}{3}$ |
| 11) 507 times 93. | 12) $31,941 \div 63$ |
| 13) $\frac{2}{7} - \frac{1}{14} + \frac{1}{2}$ | 14) $12\frac{2}{5} - 5\frac{3}{4}$ |
| 15) The product of $6\frac{2}{3}$ and $4\frac{3}{4}$. | 16) $\frac{2\frac{5}{8}}{\frac{15}{16}}$ |
| 17) $15 \bullet 8 - 4 + 18 \div 3(6^1)$ | 18) $4^3 - \{8 \div 2\} + 4(7 - 2)$ |
| 19) The quotient of 10.8 and 0.9 | 20) $9\frac{3}{4} \div 6\frac{2}{3}$ |
| 21) $6.3 + 95.4 + 0.096 + 7.2$ | 22) $3\frac{2}{3} + 2\frac{1}{2}$ |
| 23) Change $\frac{43}{8}$ to a mixed number. | 24) $8\frac{1}{2} + \frac{7}{8} - 4\frac{2}{3}$ |
| 25) $(5.872) \div (0.0429)$ (round to the nearest tenth) | |
| 26) $(8.5)(0.91)$ | 27) $453.6 - 238.914$ |
| 28) $64 - 4 \bullet 8 + (3^2 - 2)^2 - 7^0$ | 29) $31 + (24 \div 8 \bullet 3) - 3^3$ |
| 30) $\left(\frac{1}{6} - \frac{3}{4}\right)^2 \div \frac{11}{24} - \frac{3}{22}$ | 31) $\frac{2}{3} - \frac{1}{6}\left(\frac{2}{3}\right)^2$ |
| 32) $8.1 (2.8) \div (0.9)(0.4)$ | 33) $(7.3 - 5.7)^2 + 9.2$ |

Perform the indicated operations:

34) $2.1 - 0.03(11.2) + (2.7)^2$

35) $8 - 2\frac{1}{6}$

36) $\frac{7}{8} \div 0$

37) $0 \div 6.89$

38) The sum of 13 and $7\frac{2}{3}$.

39) $90 \div (-9)$

40) $-25.4 + 3.8$

41) $-3\frac{3}{14} - 6\frac{5}{6}$

42) $-9.2(4.7)$

43) $\frac{13-15+7(-2)}{-2^2}$

44) $-72 - (-53) + 11$

45) $-12 - 5 - (-7) + (-6)$

46) $\left\{-\frac{1}{4}\right\} \div \left\{-8\frac{3}{4}\right\}$

47) $(-8)(-6) \div (-4)(2)$

48) $18 \cdot (-1)^5 \div (-3) \cdot (-2) - 8$

49) $[3 - \{7 - 12\}] - 5^2$

50) $-6(-2) \div 0$

51) $3.3(-4.1)(5.8)(0)$

52) $32\left(-\frac{3}{8} + \frac{1}{2}\right)^2 \div \frac{-13}{36} - \left(-\frac{3}{26}\right)$

53) Estimate by rounding to the nearest thousand: $31,941 \div 8324$.

54) Estimate by rounding to the nearest ten: $123(78) + 371$.

55) Find the mean, median, and mode of 29, 28, 23, 29, and 21.

56) Find the mean, median, and mode of 8.3, 8.2, 6.5, and 8.4.

57) Find the mean, median, and mode of $3\frac{2}{3}$, $\frac{3}{4}$, $3\frac{2}{3}$, $2\frac{1}{8}$, $\frac{1}{6}$, 4, and $\frac{1}{8}$.

Round the following numbers to the indicated place value:

58) 98,495 to the nearest thousand.

59) 9,176 to the nearest ten.

60) \$2.469 to the nearest dollar and to the nearest cent.

61) \$8.91324 to the nearest dollar and to the nearest cent.

For problems #62 – #65, compare using >, =, or <:

62) 0.01 _____ 0.0095 63) $\frac{3}{7}$ _____ 0.429

64) -11 _____ -8 65) $-\frac{3}{14}$ _____ $\frac{3}{22}$

Convert the following:

66) Convert 0.55 into a fraction. 67) Convert 4.006 into a fraction.

68) Convert $\frac{5}{6}$ into a decimal. 69) Convert $\frac{9}{8}$ into a decimal.

70) Convert 0.82 into a fraction and into a percent.

71) Convert $135\frac{1}{2}\%$ into a fraction and into a decimal.

72) Write 0.079 in words.

73) Write 3,670,925 in words.

74) Write 79.0562 in words.

75) Write $25\frac{3}{8}$ in words.**Solve the following:**

76) Prissy scored a 78, 93, 93, 87, and a 79 on her first five tests. What was her average score for those five tests?

77) Find the average of 3.41, 8.96, and 4.67.

78) Juanita has $8\frac{1}{4}$ pounds of apple sauce and if she gives $3\frac{2}{3}$ pounds of apple sauce to Leroy, how many pounds does Juanita have left?79) Latisha has a stack of boards that is 45 inches thick. How many boards are in the stack if each board is $1\frac{1}{4}$ inches thick?

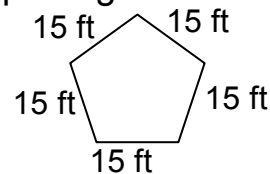
80) If Lucy buys 4 dog bones for \$0.95 each, 3 bags of dog food for \$9.52 each, and 5 dogs toys for \$5.36 each, how much did she spend?

81) Juan purchased a lawn mower that was \$197 less than the amount Leroy paid for his lawn mower. If Leroy paid \$742 for his lawn mower, how much did Juan pay for his?

Solve the following:

- 82) Maria paid 830¢ for 5 jars of peanut butter. How much did she pay for one jar of peanut butter?
- 83) Carolyn has 43 yd of material. If each shirt requires 4.6 yards of material and she plans to make 8 shirts, how much material will she have left over?
- 84) A grocery store wants to make 30 packages of coffee that contain $2\frac{1}{4}$ lbs of coffee each. How much coffee will they need?

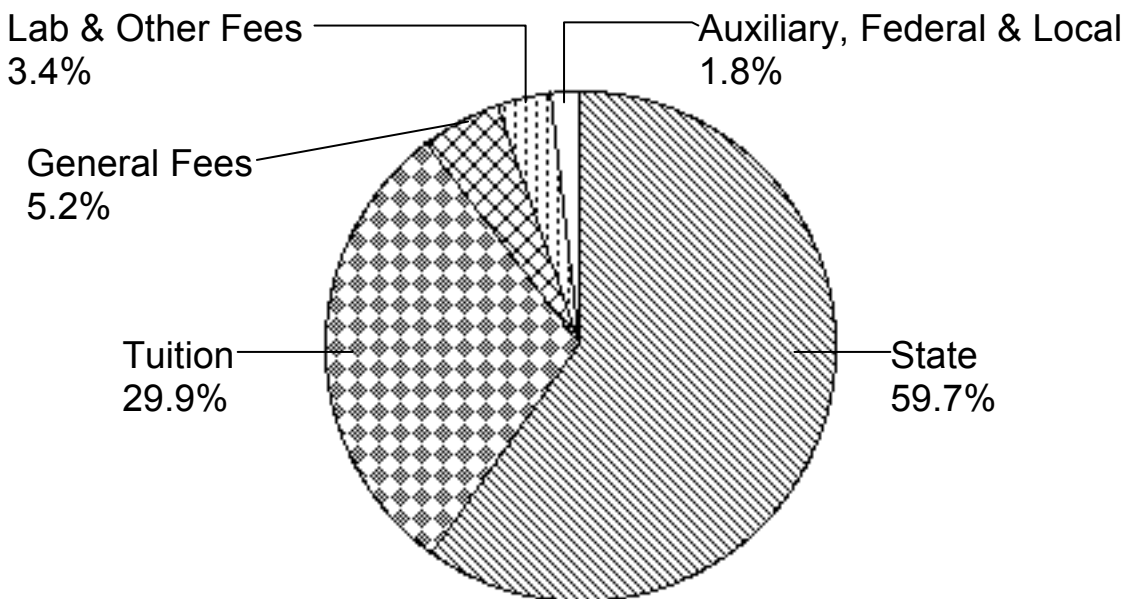
- 85) Find the perimeter of the following pentagon if the length of each side is 15 feet:



- 86) Juanita had \$345. If she bought 3 shirts for \$26 each, 8 skirts for \$18 each, and 9 pairs of hose for \$5 each, how much money does she have left?
- 87) Ferdinand the Bull wants to enclose a rectangular park that is $4\frac{1}{8}$ miles long and $\frac{2}{9}$ miles wide. What is the area of the park?
- 88) Thirty-one out of forty-two customers of the Wendy's ordered a hamburger. What fraction of the customers ordered a hamburger? What percentage (to the nearest tenth) does this represent?
- 89) The change in the cost per share of stock in the Krusty Krab was: $+\$2\frac{1}{4}$, $-\$1\frac{3}{8}$, and $-\$2\frac{7}{8}$ in the first three days of the week. What was the net gain or loss?

For problems 90 – 92, use the following graph:

**Revenue Budget (2001– 2002)
for Alamo Community College District**

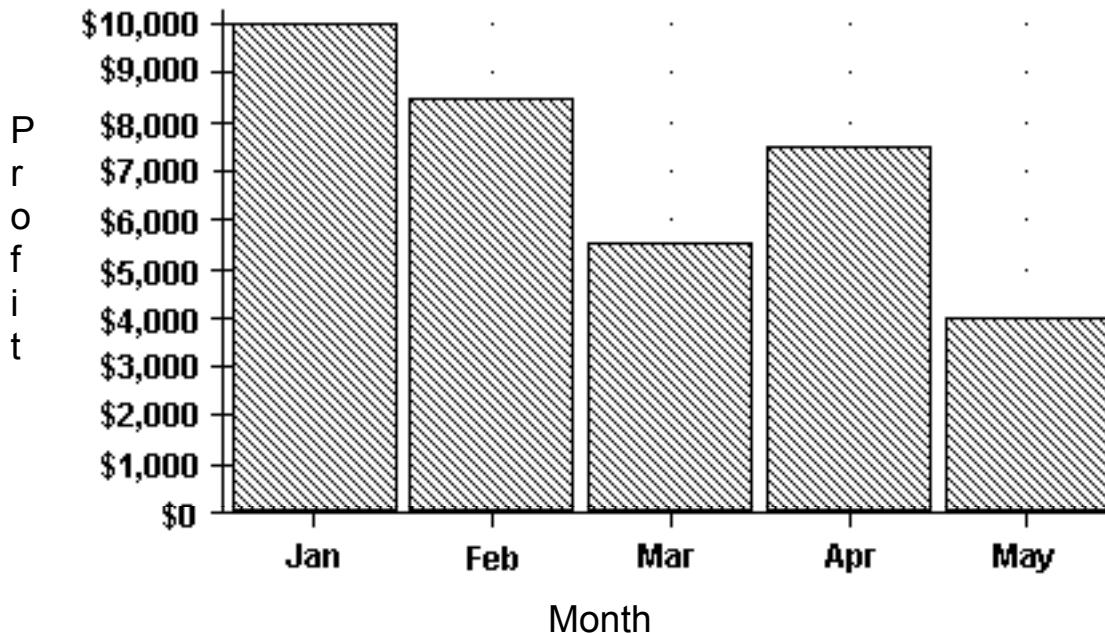


Source: 2001-02 ACCD Budget Book

- 90) What percent of the revenue came from General Fees and Lab & Other Fees?
- 91) What percent more revenue does the district receive from Tuition than from General Fees, Lab & Other Fees, and Auxiliary, Federal & Local combined?
- 92) It is projected that by the 2021-2022 school year, the percentage of revenue the district receives from the state will have declined to 37.3%. What percent drop per year does this represent?

For problems 93 – 96, use the following graph:

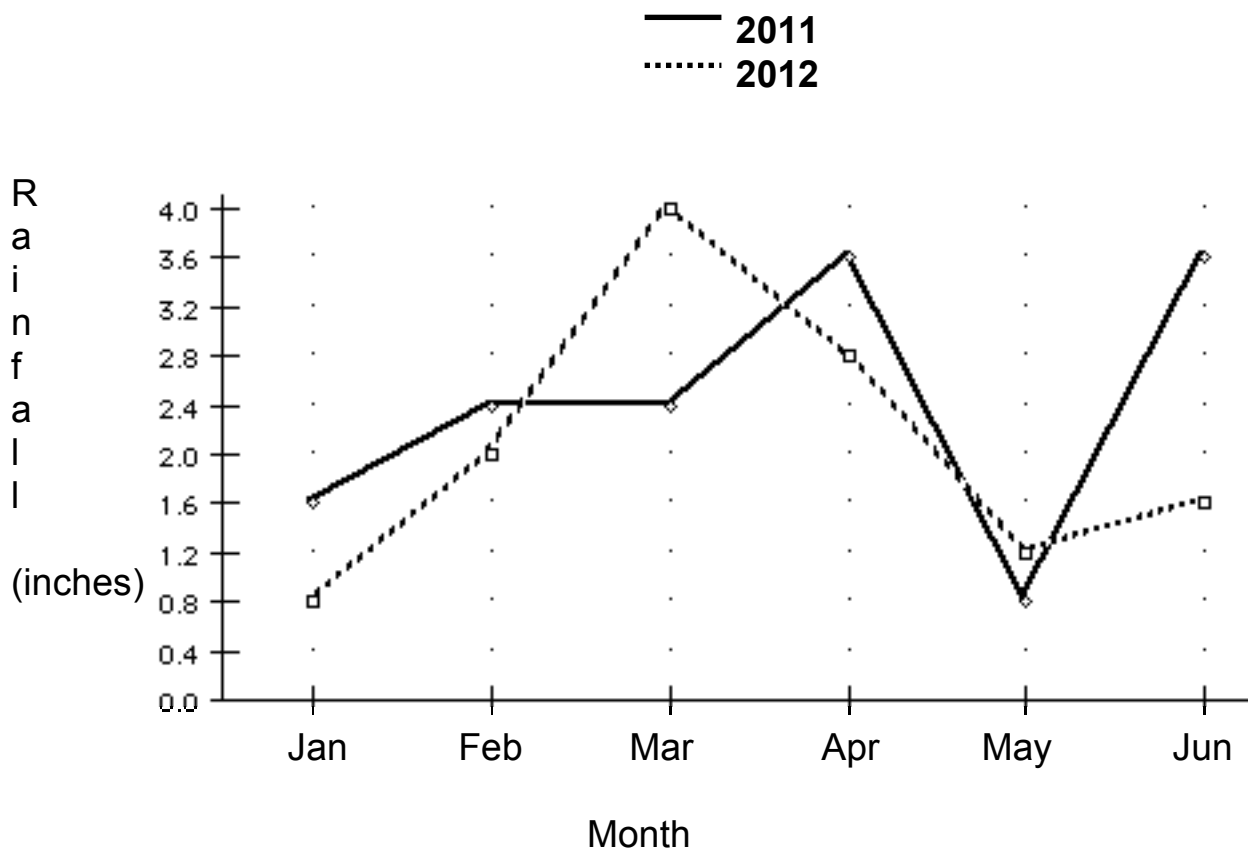
**Profit generated by Polly's Catering Service
for the first five months of the year**



- 93) How much more Profit did the Polly's Catering Service make in January than in March?
- 94) Between what two consecutive months did the largest decrease in profits occur?
- 95) In what month(s) did the Polly's Catering Service make \$8,500 in profits?
- 96) If Polly's Catering Service makes a total profit of \$96,000 for the entire year, what fraction of the total profit was made in the first quarter of the year (January through March)? Also, convert your answer to a percent.

For problems 97 – 102, use the following graph:

Rainfall collected in Don's Rain Gauge for the first six months of 2011 and 2012



- 97) How much rain fell in March of 2012?
- 98) How many months was the rainfall below two inches in 2011?
- 99) In what month(s) was the rainfall equal to 0.8 inches.
- 100) If the total rainfall for 2011 and 2012 was 50 inches, what fraction of the rainfall occurred in the first half of the 2011 and 2012?
- 101) Find the average of the amount of rainfall for first **five** months of 2011.
- 102) Find the average of the amount of rainfall for the six months of 2012.

Write each phrase in words:

- 103) The balance is equal to sum of loan (L) and negative fifty-eight. Write an expression for the balance.
- 104) The length is thirteen less than twice width (w). Write an expression for the length.
- 105) The number of pecans amounts to the quotient of triple the number of almonds (a) and 8. Write an expression for the number of pecans.
- 106) The Celsius temperature is same as the product of $\frac{5}{9}$ and the difference of Fahrenheit temperature (F) and 32° . Write an expression for the Celsius temperature.

Evaluate the following:

- 107) $P = 2L + 2w$; $L = 12.3$ m and $w = 6.7$ m.
- 108) $A = p + prt$; $p = \$600$, $r = 0.07$, and $t = 1.25$ years.
- 109) $-x + 2y + z$; $x = -3$, $y = 2$, and $z = -7$
- 110) $\frac{-x+7y+3}{x^2-y^2}$; $x = -4$ and $y = -3$

In the problems below, the student has made an error. Use critical thinking to find and correct the error. Then finish working the problem.

111) $23(7 + 21 \div 7) - 1$

Solution:

$$\begin{aligned} &23(7 + 21 \div 7) - 1 \\ &= 23(28 \div 7) - 1 \\ &= 23(4) - 1 \\ &= 92 - 1 = 91 \end{aligned}$$

112) $1.2(0.4) \div 1.6(0.3)$

Solution:

$$\begin{aligned} &1.2(0.4) \div 1.6(0.3) \\ &= 0.48 \div 1.6(0.3) \\ &= 0.48 \div 0.48 \\ &= 1 \end{aligned}$$

113) $9\frac{3}{8} - 6\frac{1}{6}$

Solution:

$$\begin{array}{r} 9\frac{3}{8} = 9\frac{3}{24} \\ -6\frac{1}{6} = -6\frac{1}{24} \\ \hline \end{array}$$

$$3\frac{2}{24} = 3\frac{1}{12}$$

114) Write $6\frac{3}{4}$ as a percent.

Solution:

$$\begin{array}{r} 0.75 \\ 4 \overline{)3.0} \\ \underline{-28} \\ 20 \\ \underline{-20} \\ 0 \end{array}$$

So, $6\frac{3}{4} = 6.75\%$

Without working the problems, use critical thinking to determine which answers are unreasonable:

115) $0.3\# \overline{)32.####}$

i) ≈ 0.8757 ii) ≈ 8757 iii) ≈ 8.757 iv) ≈ 87.57

- a) i, iii, & iv
- b) ii, iii, & iv
- c) i
- d) i, ii, & iii
- e) i, ii, & iv

116) Convert $-\frac{\#}{1\#}$ into a decimal.

i) ≈ 0.273 ii) ≈ -0.273 iii) 3.8 iv) -3.8

- a) i, ii, & iii
- b) i, iii, & iv
- c) iii & iv
- d) i & ii
- e) i & iii

117)
$$\begin{array}{r} 37\#\# \\ \times 2\#\# \\ \hline \end{array}$$

i) 770,685 ii) 77,848 iii) 4,914 iv) 80,000

- a) ii & iv
- b) i & iii
- c) iii
- d) None
- e) ii, iii, & iv

118) The average of 6.##, 2.4, 9.5, 6.#, and 7.#.

i) 33.2 ii) 6.54 iii) 2.1 iv) 9.8

- a) i, ii, and iii
- b) i
- c) i, iii, and iv
- d) ii, iii, and iv
- e) i, ii, and iv

Answers:

- 1) $\frac{47}{5}$ 2) $\frac{3}{7}$ 3) 6.6746 4) 0.4872 5) 3690 6) 4508
- 7) 69.518 8) 0.132 9) $\frac{7}{6}$ or $1\frac{1}{6}$ 10) 54 11) 47,151
- 12) 507 13) $\frac{5}{7}$ 14) $6\frac{13}{20}$ 15) $31\frac{2}{3}$ 16) $2\frac{4}{5}$ 17) 152
- 18) 80 19) 12 20) $1\frac{37}{80}$ 21) 108.996 22) $6\frac{1}{6}$ 23) $5\frac{3}{8}$
- 24) $4\frac{17}{24}$ 25) ≈ 136.9 26) 7.735 27) 214.686 28) 80 29) 13
- 30) $\frac{20}{33}$ 31) $\frac{16}{27}$ 32) 10.08 33) 11.76 34) 9.054 35) $5\frac{5}{6}$
- 36) undefined 37) 0 38) $20\frac{2}{3}$ 39) -10 40) -21.6 41) $-10\frac{1}{21}$
- 42) -43.24 43) 4 44) -8 45) -16 46) $\frac{1}{35}$ 47) -24 48) -20
- 49) -17 50) undefined 51) 0 52) $-\frac{33}{26}$ or $-1\frac{7}{26}$ 53) 4
- 54) 9970 55) Mean = 26, Median = 28, Mode = 29
- 56) Mean = 7.85, Median = 8.25, Mode = none
- 57) Mean = $2\frac{1}{14}$, Median = $2\frac{1}{8}$, Mode = $3\frac{2}{3}$ 58) 98,000 59) 9180
- 60) \$2; \$2.47 61) \$9; \$8.91 62) > 63) < 64) < 65) <
- 66) $\frac{11}{20}$ 67) $\frac{2003}{500}$ or $4\frac{3}{500}$ 68) $0.\overline{83}$ 69) 1.125 70) $\frac{41}{50}$; 82%
- 71) $\frac{271}{200}$ or $1\frac{71}{200}$; 1.355 72) Zero and seventy - nine thousandths
- 73) Three million, six hundred seventy thousand, nine twenty - five
- 74) Seventy - nine and five hundred sixty - two ten thousandths
- 75) Twenty - five and three - eighths 76) 86 77) 5.68 78) $4\frac{7}{12}$ lb
- 79) 36 boards 80) \$59.16 81) \$545 82) 166¢ or \$1.66
- 83) 6.2 yards 84) $67\frac{1}{2}$ lb 85) 75 feet 86) \$78 87) $\frac{11}{12}$ sq. mile
- 88) $\frac{31}{42}$; $\approx 73.8\%$ 89) -\$2 per share 90) 8.6% 91) 19.5%
- 92) 1.12% drop per year 93) \$4500 94) April & May 95) February
- 96) $\frac{1}{4}$; 25% 97) 4 inches 98) 2 months 99) May, 2011 & January, 2012
- 100) $\frac{67}{125}$ 101) 2.16 in 102) $2.0\overline{6}$ in 103) $(L + (-5))$ 104) $2w - 13$ 105) $3a \div 8$
- 106) $\frac{5}{9}(F - 32)$ 107) $P = 38$ m 108) $A = \$652.50$ 109) 0 110) -2 111) 229
- 112) 0.09 113) $3\frac{5}{24}$ 114) 675% 115) d 116) b 117) e 118) c