

For incoming Statistics students

Cover Page - Please Read!!

The intent of this packet is to review key concepts from previous years' math classes so you return to school in the Fall with minimal skill loss. This packet is due the first day back in school in the fall. You will be uploading these pages onto Canvas. It will be graded. You need to get off to a good start so spend some quality time on this packet this summer.

Please write the answers to each problem in the space provided in this packet. You may include your work on this paper or on separate pieces of papers. If you are including your work on this paper, please be neat and box your final answers, so we don't have to hunt them down!

Please use websites of your own choosing to solve these problems. Don't fake your way through these problems. Faking through these problems won't help set you in the right path for your next math class. You need to get off to a good start so spend some quality time on this packet this summer. You want these techniques to be relatively fresh in your mind in the fall, so begin working on this packet about four weeks before the start of school. Do not wait to do them at the very last minute. These take time.

Simplify.

1. $17 - 6 \cdot 10 \div 2 + 12$

2. $5 \times (8 + 7) + 7$

3. $[2 \cdot (10 + 5)] - 5$

4. $\frac{7}{13} + \frac{16}{13} - \frac{8}{13}$

$$5. \frac{1}{4} + \frac{5}{6} + \frac{3}{8}$$

$$6. \frac{2}{3} + \frac{1}{11}$$

$$7. -\frac{17}{9} - \frac{14}{8}$$

$$8. \frac{3}{7} - \frac{4}{m}$$

$$9. 8\frac{1}{2} + 4\frac{1}{2}$$

$$10. 13\frac{1}{3} - 7\frac{7}{9}$$

$$11. 4\frac{7}{8} + \left(-9\frac{1}{2}\right)$$

$$12. 5\frac{1}{3} + \left(-3\frac{9}{18}\right)$$

$$13. \frac{7}{24} - \frac{15}{90}$$

Evaluate.

$$14. 47 + 2d, \text{ for } d = 3$$

15. $\frac{dp}{d+p}$ for $d = 8$ and $p = 1$

16. $3(10m + 3z + 12)$ for $m = 3$ and $z = 6$

Simplify the product.

17. $4(-7)$

18. $-8(-9)$

19. $-4 \cdot 10 \cdot 6$

Simplify the expression.

20. $7d + 12 - 4d - 3$

21. $9 - 5(-7x + 5)$

Use the Distributive Property to multiply.

22. $5(2t - 5)$

23. Suppose you have 30 CDs. You know that you have 11 more CDs than your friend. Write and solve an equation to find the number of CDs your friend has.

24. The odometer in your mother's car reads 2056 miles less than the odometer in your uncle's car. Your mother's odometer reads 22010 miles. About how many miles are on the odometer of your uncle's car?

25. A road has a speed limit of 30 mi/h. Write an inequality that describes the legal speeds r for motor vehicles.

26. Write an inequality for the sentence. Graph the solution on a number line.
- c is not less than zero.
27. Jose has 9 more comic books than Robin. Robin has 5 more comic books than Lee.
- If Jose has 23 comic books, how many comic books does Robin have?
 - How many comic books does Lee have?
28. Identify the underlined place in 83.5851. Then round the number to that place.
29. Round 18.79 to the underlined place.
30. Is 5.95 a reasonable quotient for $42.364 \div 7.12$? Explain.
31. You earned \$96.15. You would like to buy some new T-shirts. Estimate the number of T-shirts you can buy if each one costs \$13.75.
32. Find the mean, median, mode, and range of this data: 49, 49, 54, 55, 52, 49, 55. If necessary, round to the nearest tenth.
33. The number of patients treated at Dr. Artin's dentist office each day was recorded for nine days. These are the data: 6, 6, 6, 5, 5, 6, 5, 6, 5. Find the mean, median, mode, and range of the data. If necessary, round to the nearest tenth.
34. A teacher allows her students to decide whether to use the mean, median, or mode to determine their test averages. One student determined that he will receive the highest average if he uses the mean. Which test scores are his?

35. The table shows the number of tractors per 1,000 people in selected countries. Find the mean, median, and mode of the data.

Country	Number
Ireland	47
Norway	41
Denmark	40
Canada	35
France	30
Sweden	27
Germany	27
Japan	25
Italy	23
United States	22
Spain	18
Switzerland	17
United Kingdom	10

36. Use the formula $d = rt$. Find t for $r = 46.6$ m/h and $d = 456.68$ m.
37. The formula $F = \frac{n}{4} + 37$ estimates the temperature F in degrees Fahrenheit when crickets chirp n times per minute. Use the formula to estimate the temperature when $n = 75$ chirps/min. Round to the nearest whole number, if necessary.
38. Use the formula $P = 2l + 2w$. Find the perimeter of a rectangle with a length of 12.9 ft and a width of 19.3 ft.
39. The Johnsons framed a family picture to hang on the wall. The perimeter of the frame is 72 inches. Use the formula $P = 2l + 2w$ to find the length of the frame if the width is 14 inches.

Solve the equation.

40. $2.5 = d - (-20)$
41. $39.7 + b + 30.1 = 165.288$

42. $\frac{m}{-4} = -2.95$

43. A farm produces an average of 17.1 liters of milk per day. About how many days will it take to produce 200 liters of milk?

44. A baseball player was at bat 428 times in one season, and had a batting average of .344. The batting average formula is $a = \frac{h}{n}$, where a is the batting average, h is the number of hits, and n is the number of times at bat. Use the formula to find the number of hits the baseball player made.

Solve by simplifying the problem.

45. The houses on your street are numbered with odd numbers starting with 1 and ending with 201. How many house numbers contain at least one 7?

Solve using any strategy.

46. A school band has a brass section of trumpet, trombone, and tuba players. There are twice as many trombones as tubas, and half as many trombones as trumpets. If there are two tubas in the band, what is the total number of players in the brass section?

47. It cost Neil \$2.88 to make 2 dozen muffins. He sold the muffins for \$.80 each. If Neil sold 6 dozen muffins, how much profit did he make from the sale?

48. Which fraction is equivalent to $\frac{35}{21}$?

49. Write $\frac{8}{74}$ in simplest form.

50. Write $\frac{12g^2h}{36g^2h^3}$ in simplest form.

51. Crystal wants to put a fence around her vegetable garden. Her garden is 5 ft wide and 4 ft long. She plans to put a post at each corner and at every foot. How many fence posts will Crystal need?

Graph on a number line.

52. $2\frac{1}{2}$

53. $-\frac{6}{7}$

54. 0.1

Use a number line to compare the fractions. Use $<$, $>$, or $=$.

55. $-\frac{6}{7}$ ■ $-\frac{1}{7}$

56. $\frac{1}{6}$ ■ $\frac{5}{6}$

Write as a decimal.

57. $\frac{19}{20}$

58. $2\frac{5}{16}$

Order from least to greatest.

59. $-0.9, 0.45, \frac{1}{3}, \frac{1}{9}$

60. $-\frac{3}{8}, -0.6, -1.3, -\frac{1}{2}$

Write the decimal as a fraction or a mixed number in simplest form.

61. 2.5

62. 1.48

Find the sum or difference. Simplify if possible.

63. $\frac{4}{12} + \frac{9}{12}$

64. $\frac{11}{w} - \frac{5}{w}$

Find the product. Simplify if possible.

65. $-1\frac{3}{7} \cdot \left(-3\frac{2}{3}\right)$

66. $\frac{4}{2\alpha} \cdot \frac{\alpha}{11}$

Find the quotient. Simplify if possible.

67. $2\frac{2}{3} \div 1\frac{1}{11}$

Solve.

68. $w + \frac{1}{5} = \frac{7}{8}$

69. $b + \frac{2}{9} = 1\frac{3}{5}$

70. $6a = \frac{5}{7}$

71. $\frac{2}{7}a = \frac{8}{5}$

72. $3\frac{3}{5}t = -4\frac{1}{2}$

73. Mr. Johnston needs a shelf to hold a set of textbooks, each $1\frac{3}{4}$ in. wide. How many books will fit on a 35-in.-long shelf?

Write the ratio as a fraction in simplest form.

74. 30 : 48

75. 24 to 20

76. In the population of a particular country, the male-to-female ratio is 46 to 54. Write this ratio as a fraction in simplest form.

77. Convert 50 mi/h to feet per minute.

Solve the proportion.

78. $\frac{4}{21} = \frac{x}{168}$

79. $\frac{10}{a} = \frac{15}{30}$

80. $\frac{b}{10.5} = \frac{157.5}{52.5}$

81. One hundred nautical miles equals about 185 kilometers. To the nearest kilometer, how far in kilometers is 290 nautical miles?
82. Find 78% of 380. Round to the nearest tenth of a percent if necessary.
83. What percent of 67 is 33? If necessary, round to the nearest tenth of a percent.
84. Emma already has read 6 of 20 books on her summer reading list. What percent of the books on her list has she read already?
85. Two U.S. states are not part of the continental United States. What percent of the fifty U.S. states are included in the continental United States?
86. 20 is 50% of what number? If necessary, round to the nearest tenth.

Write the percent as a fraction or mixed number in simplest form.

87. 35%
88. 155%
89. Write 88.2% as a decimal.

90. At the Mega Theater, 80% of the movies this weekend are comedies. As a fraction in simplest form, what fraction of the movies are comedies?

Write the decimal as a percent.

91. 0.798

92. 1.513

Write the fraction as a percent. Round to the nearest tenth of a percent if necessary.

93. $\frac{17}{40}$

Write an equation and solve. Round to the nearest tenth where necessary.

94. What is 35% of 63?

95. 19 is what percent of 40?

96. 64 is 80% of what?

97. What percent of 24 is 30?

98. 21 is 35% of what number?

99. In a survey, 480 people, or 75%, said they attended a movie at least once a month. How many people were surveyed?

100. The circulation of a newsletter decreased from 3,200 to 2,464. What was the percent of decrease in circulation?

Find the real-number root.

111. $\sqrt{-2.56}$
Simplify.

112. $\sqrt{6} + 2\sqrt{6}$

Solve the equation.

113. $\sqrt{x+10} - 7 = -5$

114. Solve the equation $-6 + \sqrt{x-5} = -2$.

115. Solve $\sqrt{11x} = 3\sqrt{x+2}$.

Simplify the radical expression.

116. $-4\sqrt{160}$

117. $-3\sqrt{180k^4}$

118. $\sqrt{\frac{10}{81}}$

119. $\sqrt{\frac{80w^3}{9}}$

120. The formula $r = \sqrt{\frac{A}{P}} - 1$ gives the interest rate r that will allow principal P to grow into amount A in two years, if the interest is compounded annually. Suppose you have \$425 to deposit into an account. Find the interest rate you would need to have \$470 in the account at the end of the second year.