

Math 750 Final Review

1 Multiply.

$$\frac{9}{13} \cdot 1\frac{5}{8}$$

Express your answer as a mixed number where the fraction part is in lowest terms.

2 Simplify.

$$6\frac{3}{5} \cdot \left(5\frac{4}{5} \div 5\right)$$

3 Divide.

$$60 \div 3\frac{1}{3}$$

4 Divide.

$$10\frac{2}{3} \div 8$$

5 Simplify this complex fraction.

$$\frac{\frac{2}{11}}{\frac{7}{3}}$$

6 Simplify.

$$\left(\frac{3}{7}\right)^2$$

7 Multiply the following. Be sure the answer is written in lowest terms.

$$\frac{6}{16} \cdot \frac{4}{3}$$

- 8 Find the quotient by replacing the divisor by its reciprocal and multiplying. Express your answer in lowest terms.

$$80 \div \left(\frac{10}{27}\right)$$

- 9 Simplify the expression as much as possible.

$$6 \div \left(\frac{1}{4}\right)^2$$

- 10 Simplify the expression as much as possible.

$$4 \div \left(\frac{2}{9}\right)^2 + 25 \div \left(\frac{5}{3}\right)^2$$

- 11 Perform the subtraction below.

$$\frac{13}{15} - \frac{7}{10}$$

- 12 Find the following product. (Multiply.)

$$\frac{8}{7} \cdot 6$$

- 13 Find the following product. (Multiply.) Express your answer a proper fraction or a mixed number, not as an improper fraction.

$$\frac{3}{5} \cdot 2 \cdot 1\frac{1}{3}$$

- 14 Subtract the following mixed numbers.

$$10\frac{8}{11} - 5\frac{2}{11}$$

- 15 Subtract the following mixed numbers.

$$7\frac{10}{11} - 4\frac{7}{13}$$

16 The following problem involves the concept of borrowing. Subtract.

$$13 - 5 \frac{2}{7}$$

17 Use the definition of exponents as indicating repeated multiplication to simplify the expression.

$$18^0$$

18 Use the rule for the order of operations to simplify the expression: $10 + 2 \cdot 7$.

19 Use the rule for the order of operations to simplify the expression.

$$5 \cdot 6 - 3$$

20 Use the rule for the order of operations to simplify the expression:

$$8 \cdot 9 + 8 \cdot 2$$

21 Use the rule for the order of operations to simplify the expression.

$$2 + 5[9 + 3(4 - 1)]$$

22 Evaluate:

$$9^2 - 6(-7)(-2)$$

23 Evaluate:

$$\frac{-15 - 22}{-9 - 3}$$

24 By performing the subtraction, we obtain:

$$- 25 - (- 40) = \underline{\quad}$$

25 Use the rules of the order of operations along with the rules for addition, subtraction, multiplication, and division to simplify the expression.

$$\frac{6(- 7)}{7 - 14}$$

26 Write the ratio in lowest terms, without using decimals.

$$\frac{5}{6} \text{ to } 7 \frac{1}{2}$$

27 1100 feet per second = _____ miles per hour

28 The bullet from a rifle leaves the barrel traveling 1900 feet/second. Convert 1900 feet/second to miles/hour. (Round to the nearest whole number.)

_____ mi/hr

29

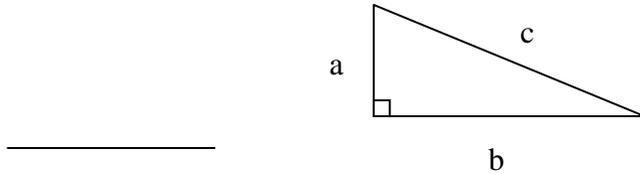
Make the following conversion: 50 cm to inches. Use a calculator for the calculations and round your answer to the nearest hundredth.

30 What is 40% of 400?

31 48 is 75% of what number?

32 What percent of 500 is 10?

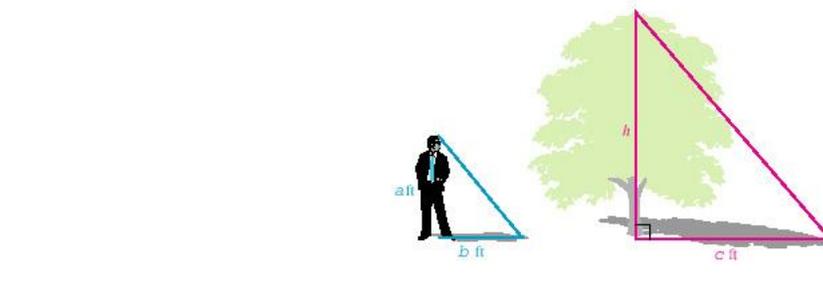
33 Refer to the illustration. Find c if $a = 8$ and $b = 6$.



34 Refer to the illustration. Find b if $a = 4$ and $c = 5$.

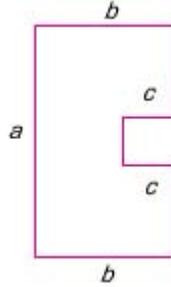


35 The tree in the illustration casts a shadow $c = 3$ feet long while a person $a = 6$ feet tall casts a shadow $b = 2$ feet long. Find the height of the tree.

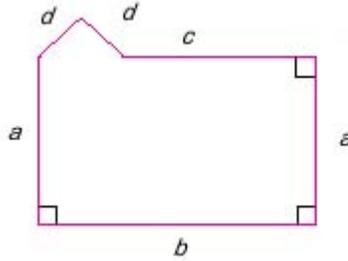


36 A 17-foot ladder reaches a window 15 feet above the ground. How far from the wall is the base of the ladder?

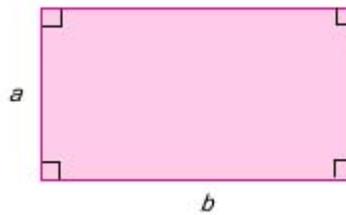
37 Find the perimeter of the figure if $a = 9$, $b = 8$, $c = 1$.



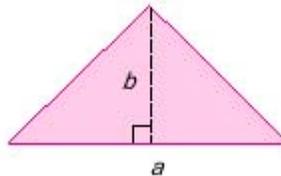
38 Find the perimeter of the figure if $a = 7$, $b = 9$, $c = 5$, $d = 4$.



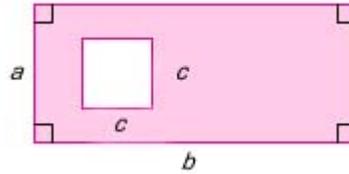
39 Find the area of the shaded part of the figure if $a = 4$, $b = 8$.



40 Find the area of the shaded part of the figure if $a = 18$, $b = 6$.



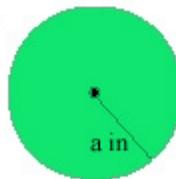
- 41 Find the area of the shaded part of the figure if $a = 5$, $b = 8$, $c = 2$.



- 42 A rectangular living room measures 6 by 9 feet. At \$33 per square yard, how much will it cost to carpet the room?

- 43 To the nearest hundredth, find the circumference of a circle that has a diameter of 19 inches, if $\pi = 3.1415$.

- 44 Find the area of the circle to the nearest tenth, if $\pi = 3.14$ and $a = 9$ in.

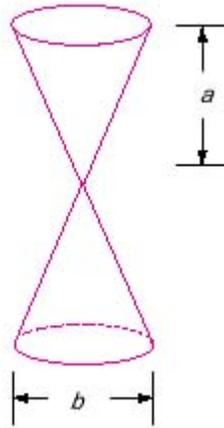


- 45 The rotunda at a state capitol is a circular area 100 feet in diameter. The legislature wishes to appropriate money to have the floor of the rotunda tiled. The lowest bid is \$90 per square yard, including installation.
How much must the legislature spend to tile the floor?

- 46 Find the volume of a cone with a height of 9 centimeters and a circular base with a diameter of 3 centimeters.

47 Find the surface area of a rectangular solid with dimensions of 8 by 4 by 8 centimeters.

48 Find the volume of the figure if $a = 84$ in., $b = 5$ in. to the nearest hundredth.



49 A sugar cube is $\frac{1}{9}$ inch on each edge. How much volume does it occupy? Round to the nearest thousandth.

50 The lifting power of a spherical balloon depends on its volume. How many cubic feet of gas will a balloon hold if it is 4 feet in diameter? Round to the nearest thousandth.

51 Map Reading

The scale on a map indicates that 1 inch corresponds to an actual distance of 80 miles. Two cities are 5 inches apart on the map. What is the actual distance between the two cities?

52 A farmer knows that of every 50 eggs his chickens lay, only 45 will be marketable. If his chickens lay 950 eggs in a week, how many of them will be marketable?

_____ eggs

53 Write the equivalent of this fraction using a denominator of 33.

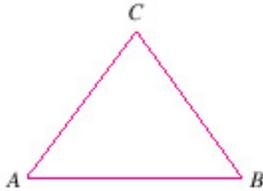
$$\frac{8}{11}$$

54 The measures of two angles of $\triangle ABC$ (shown in the illustration) are given. Find the measure of the third angle, if

$$m(\angle A) = 34.77^\circ$$

and

$$m(\angle B) = 81.76^\circ$$



55 A high school's total enrollment is 940. Of these, 25% are in the freshman class. How many students in this high school are in the freshman class?

_____ students

56 Test Scores

On a 160-question test a student answered 64 correctly. What percent of the problems did the student work correctly?

57 Farming

A farmer owns 40 acres of land. Of the 40 acres, only 75% can be farmed. How many acres are available for farming?

58 Number of Students

If 40% of the students in a certain college are female and there are 1662 female students, what is the total number of students in the college?

59 A woman drives her car 250 miles in 5 hours. At this rate how far will she travel in 8 hours?

_____ mi

- 60 In the first 5 games of the season, a football team scores a total of 75 points. At this rate how many points will the team score in 10 games?
_____ points
- 61 A traveling salesman figures it costs 22¢ for every mile he drives his car. How much does it cost him a week to drive his car if he travels 575 miles a week?

- 62 During a drive of the offense of a team in a football game, the team advanced 7 yards on the first play, was taken back 12 yards on the second play, and advanced 2 yards on the third play. How many yards did the team lose on these 3 plays?
_____ yards
- 63 Luis had a balance of \$325 on his checking account at the beginning of the month. During the month, he writes 4 checks, for \$45, \$38, \$90, and \$107. He also makes a deposit of \$57. How much money does he have in his account once all checks have been cashed?
\$ _____
- 64 At 10:00 in the morning in Superior, Wisconsin, Bob notices the temperature is 3 degrees below zero Fahrenheit. At noon it has warmed up by 9 degrees. What is the temperature at noon?
- 65 Steve is snorkeling in the ocean near his home in Miami. At one point he is 6 feet below the surface. If he descends another 3 feet, what negative number will represent his new position?
- 66 Stock Gain/Loss**
A stock gains 2 points on Wednesday, then loses 4 on Thursday, and gains 7 on Friday. Use positive and negative numbers and addition to write this situation in symbols.
- 67 Find the following absolute value:
 $|-52|$.

68 Simplify the expression:

$$- (-96)$$

69 Simplify the expression:

$$- |-27|$$

70 Evaluate the following expression:

$$90 - 2[23 - (2 + 3)]$$

71 Evaluate: $1 + 6(7 + 5)$.

72 Evaluate: $7 + (5 - 3)^2$.

73 Evaluate: $37 - 4 \cdot 2^3$

74 Simplify $-3 - 6(-10)$.

75 Find the sum and simplify if necessary.

$$9\frac{3}{7} + 6\frac{2}{5}$$

76 Find the difference and simplify if necessary.

$$10\frac{1}{11} - 6\frac{7}{11}$$

77 Find the difference and simplify if necessary.

$$10\frac{3}{11} - 4$$

78 Evaluate the expression.

$$\frac{2}{5} \left(-\frac{1}{4} \right) + \frac{1}{5}$$

79 Evaluate the expression.

$$\frac{3}{5} - \left(-\frac{1}{3} \right)^2$$

80 $-|-20| = \underline{\quad}$

81 Evaluate $-|-3|$

82 Use the rule for the order of operations to simplify the expression.

$$5 \cdot 7^2 - 4 \cdot 2^3$$

83 Evaluate the expression.

$$\left(-\frac{3}{4} \cdot \frac{1}{8} \right) + \left(\frac{3}{8} - \frac{1}{2} \right)$$

84 Evaluate the expression.

$$(-3)^3$$

85 Add the numbers left to right.

$$22 + (-18) + 32 + (-21)$$

86 Subtract: $31 \frac{1}{3} - 8 \frac{3}{4}$.

87 Subtract: $16 \frac{1}{20} - 1 \frac{3}{20}$

88 Evaluate $\frac{8}{9} + \frac{7}{5} \left(-\frac{1}{3}\right)^2$.

89 Use the rule for order of operations to simplify the following.
 $\left(\frac{7}{9} + \frac{1}{3}\right) \left(\frac{1}{15} + \frac{4}{5}\right)$

90 Use the rule for order of operations to simplify the following.
 $\frac{1}{5} + \frac{1}{5} \left(4 \frac{1}{2} + \frac{1}{2}\right)^2$

ANSWER KEY**Math 99 Review for Final**

1.	1, 1, 8	2.	$7 \frac{82}{125}$
			7.66
3.	18	4.	$1 \frac{1}{3}$
			1.33
5.	$\frac{6}{77}$	6.	$\frac{\text{frac}(9,49)}{0.183673}$
7.	$\frac{1}{2}$	8.	216
9.	96	10.	90
11.	$\frac{\text{frac}(1,6)}{0.166667}$	12.	$\frac{48}{7}$
13.	$1 \frac{3}{5}$	14.	$5 \frac{6}{11}$
15.	$3 \frac{53}{143}$	16.	$7 \frac{5}{7}$
17.	1	18.	24
19.	27	20.	88
21.	92	22.	- 3
23.	$3 \frac{1}{12}$		
	$\frac{37}{12}$	24.	15
	3.083333		
	$3 \frac{1}{12}$		
25.	6	26.	1; 9
27.	750	28.	1295
29.	19.69	30.	160
31.	64	32.	2
			2%
33.	10	34.	3
35.	9	36.	8
37.	36	38.	36
39.	32	40.	54
41.	36	42.	\$198
43.	59.69	44.	254.3
45.	78500	46.	21.195
	\$78500.00		$\frac{81}{12} \cdot \pi$

ANSWER KEY**Math 99 Review for Final**

- | | | | |
|-----|---|-----|---|
| 47. | 256 | 48. | 1099 |
| 49. | 0.001 | 50. | 33.49 |
| 51. | 400 | 52. | 855 |
| 53. | $\frac{24}{33}$ | 54. | 63.47 |
| 55. | 235 | 56. | 40
40% |
| 57. | 30 | 58. | 4155 |
| 59. | 400 | 60. | 150 |
| 61. | \$126.50 | 62. | 3 |
| 63. | 102 | 64. | 6
6° |
| 65. | -9 | 66. | $2 + (-4) + 7$
$2 - 4 + 7$ |
| 67. | 52 | 68. | 96 |
| 69. | -27 | 70. | 54 |
| 71. | 73
$1 + 6 * (7 + 5) = 73$ | 72. | 11
$7 + (5 - 3)^2 = 11$ |
| 73. | 5
$37 - 4 * 2^3 = 5$ | 74. | 57 |
| 75. | $15 \frac{29}{35}$ | 76. | $3 \frac{5}{11}$ |
| 77. | $6 \frac{3}{11}$ | 78. | $\frac{1}{10}$ |
| 79. | $\frac{22}{45}$ | 80. | -20 |
| 81. | -3 | 82. | 213 |
| 83. | $-\frac{7}{32}$ | 84. | -27 |
| 85. | 15 | 86. | $\text{frac}(22,7,12)$
$\text{frac}(31,1,3) - \text{frac}(8,3,4) = \text{frac}(22,7,12)$ |
| 87. | $\text{frac}(14,9,10)$
$\text{frac}(14,18,20) = \text{frac}(14,9,10)$
$\text{frac}(16,1,20) - \text{frac}(1,3,20) = \text{frac}(14,9,10)$ | 88. | $\text{frac}(47,45)$ |
| 89. | $\frac{26}{27}$ | 90. | $5 \frac{1}{5}$ |