

## Honors Math II Summer Assignment

The following skills and computations are pre-requisites to the skills you will learn throughout your time in Honors Math II. You are expected to know how to simplify and/or solve the following problems upon entrance into Honors Math II. In addition, you will be asked to complete a test that includes the following types of problems and do so **without the use of a calculator**. I would encourage you to put away your calculator when completing the problems below. You also **must show your work** to receive credit.

Compute the following without decimals or calculators. Answers must be in simplest form. If necessary, give fractions as improper and *not* mixed numbers.

1)  $\frac{1}{4} + \frac{2}{5}$

2)  $\frac{3}{4} - \frac{2}{3}$

3)  $\frac{5}{9} + \frac{1}{6}$

4)  $8 \cdot \frac{3}{4}$

5)  $\frac{7}{16} \cdot \frac{12}{5}$

6)  $15 \cdot \frac{2}{3}$

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

8)  $2\frac{3}{4} \cdot 3\frac{1}{6}$

9)  $\frac{5}{36} \cdot 12$

10)  $\frac{7}{5} \div 3$

11)  $\frac{7}{4} \div \frac{3}{8}$

12)  $7\frac{1}{2} \div 1\frac{1}{4}$

13)  $6 \div \frac{2}{3}$

14)  $32 \div 1\frac{1}{15}$

15)  $\frac{81}{100} \div \frac{9}{10}$

16)  $4\frac{3}{4} \div 8$

17)  $7 \div 4$

18)  $9 \cdot \frac{4}{9}$

19)  $\frac{2}{3} + \frac{1}{3} \div \frac{9}{7}$

20)  $\frac{7}{8} \cdot 56$

21)  $\frac{7}{8} \div 56$

22)  $\frac{\frac{3}{5}}{\frac{10}{12}}$

23)  $\frac{\frac{13}{4}}{6}$

24)  $\frac{4}{\frac{5}{12}}$

**Round each value to the nearest whole number.**

25) 59.1

26) 3.987

27) -0.9

28) 0.21

29) 39.57

30) 101.293

**Round each value to the nearest tenth.**

31) 6.78

32) -8.212

33) -3.068

34) 82.929

35) 15.236

36) 42.78

37) 75.02

38) -13.52

39) 9.997

**Round each value to the nearest hundredth.**

40) 8.456

41) -3.262

42) 8.9026

43) 6.551

44) -7.84312

45) -9.479

46) 12.007

47) 10.502

48) -6.4280

**Express as a fraction in simplest form. If necessary, give fractions as improper and *not* mixed numbers.**

49) 0.8

50) 0.45

51)  $1.\bar{3}$

52) 12%

53) 2.5

54) 2.5%

**Express as a decimal.**

55) 35%

56) 0.15%

57)  $9\frac{1}{2}\%$

58)  $\frac{1}{50}$

59)  $\frac{6}{5}$

60)  $\frac{2}{3}$

Simplify each expression without decimals or calculators.

61)  $5(x - 13)$

62)  $-2(x^2 - 4x - 1)$

63)  $\frac{1}{3}(x - 12)$

64)  $-\frac{4}{5}(10x - 15)$

65)  $\frac{2}{3}\left(24x + \frac{4}{5}\right)$

66)  $\frac{0.5x+10}{2}$

67)  $(x + 1) + (x - 5)$

68)  $(x + 1) - (x - 5)$

69)  $(x + 1)(x - 5)$

70)  $(x - 2)(x + 13)$

71)  $(x - 11)(x - 1)$

72)  $(x - 6)^2$

73)  $x^2 + x + x^2$

74)  $3x(2x - 3) + 2x(1 + x^2)$

75)  $x^2 \cdot x^3$

76)  $(x^2)^3$

77)  $\frac{x^4}{x^6}$

78)  $\frac{5a^{11}b^2}{15a^7b^9}$

79)  $\sqrt{10^2 - 4(9)(1)}$

80)  $\sqrt{(-3)^2 - 4(2)(-5)}$

Evaluate the expression for the given values without decimals or calculators.

81)  $-x^2$  for  $x = 4$

82)  $t^2 + 11$  for  $t = -5$

83)  $xy^3$  for  $x = 6$  and  $y = -2$

84)  $\frac{10}{x^2}$  for  $x = 5$

85)  $4(r^2 - 3) + 7(r - 2)$  for  $r = -5$

86)  $y^2 - 5(3y - 12)$  for  $y = 10$

87) What is the value of  $y$  for each of the given values of  $x$ ?

$$y = -2x + 7$$

$x$	$y$
-8	
0	
3	

Solve each equation. If necessary, give all answers as fractions as improper fractions in simplest form and not decimals.

88)  $-x = 2$

89)  $-3x - 9 = -16.5$

90)  $x^2 = 25$

91)  $5x^2 = 80$

92)  $50 = \frac{x}{4}$

93)  $50 = \frac{4}{x}$

94)  $3n + 2 = 5(n - 3) + 6$

95)  $4(2y + 3) - 3 = y + 3(2 - y)$

96)  $3(7 - 2n) = 30 - 7(n + 1)$

97)  $6z - 2(2z + 5) = 6(5 + z)$

98)  $\frac{2}{x} = \frac{3}{9}$

99)  $\frac{12}{31} = \frac{3}{x}$

100)  $\frac{2n-3}{5} = \frac{n+2}{6}$

101)  $\frac{2-x}{3-x} = \frac{4}{9}$

Find the equation in slope-intercept form ( $y = mx + b$ ) of each line described. (Note: You may need to start with a different form of the line.)

102) with slope  $\frac{3}{5}$  and y-intercept  $(0, -\frac{7}{10})$

103) with slope  $-\frac{3}{5}$ ; through  $(-10, 2)$

104) containing  $(1, 4)$  and  $(3, 5)$

105) containing  $(-5, 2)$  and  $(0, 1)$

Find the equation of each line described.

106) a horizontal line through  $(5, 7)$

107) a vertical line through  $(-1, -2)$

108) with slope 0; through  $(-5, -2)$

109) with undefined slope; through  $(10, -4)$

Find the x- and y-intercepts for each linear equation in slope-intercept form. Write as ordered pairs. May give decimal answers, if desired.

110)  $y = \frac{1}{3}x - 9$

111)  $y = -2x + 11$

Find the x- and y-intercepts for each linear equation in standard form. Write as ordered pairs.

112)  $3x + 5y = 15$

113)  $-2x + 11y = 11$

114)  $x + y = 10$

115)  $x - 5y = -25$

Solve each system of equations. Write solutions as ordered pairs.

116)  $x + y = 8$   
 $x - 2y = -1$

117)  $5x - 4 = 2y - 3$   
 $y - 4 = 2x - 1$

118)  $3x + 4y = -25$   
 $2x - 3y = 6$

119)  $4x + 3y = 1$   
 $6x - 2y = 21$

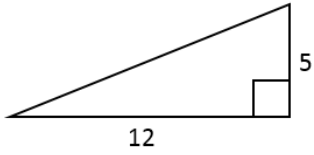
Use the Distance Formula to calculate the distance between the given points.

120) (1, 2) and (5, -1)

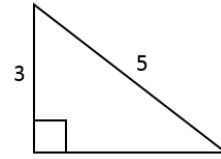
121) (-3, 6) and (-3, -2)

Use the Pythagorean Theorem to find the length of each missing side.

122)

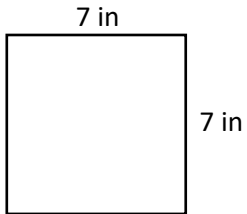


123)

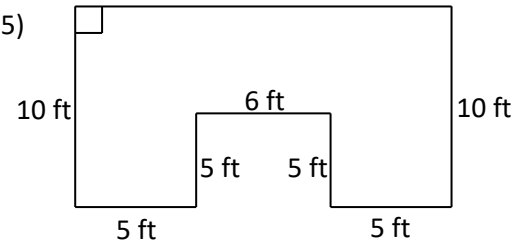


Find the area and perimeter.

124)



125)



Find the area and circumference of the circle in terms of pi.

(This means do not actually multiply by pi in your calculator—but leave the pi in your answer.)

126)

