Woodland Community College: Math practice Test

Pre-algebra Math test

The following problems are recommended practice problems for the pre-algebra section of the placement test. Some of the problems may or may not be similar to the problems on the actual test. If you have struggle completing the problems, we suggest that you review these topics before taking the test.

Do not use the calculator to do these problems.

1. Insert the appropriate symbol in each blank that will make each statement true: <,>, or =.

a) 5___7 b) -3___2 c) -4___-2 d) 0___-7 e) $|-6|$___6

2. Perform the indicated operations.

   (a) $(-3)+(-5)$ (b) $20+(-7)$ (c) $(-10)+(-6)+8$ (d) $20-25$ (e) $-10-14$ (f) $-6-(-5)$

3. Multiply or divide.

a) $-2(5)$ b) $(-3)(-6)$ c) $(4)(-4)(-10)$ d) $\dfrac{-21}{3}$ e) $\dfrac{-15}{0}$

4. Find the value of the expressions using the rules for order of operations.

a) $6\cdot 8 \div (-4)+9$ b) $7\cdot 2^{3} +3^{2} -4^{2} -4(6-2\cdot 3)$

c) $-36 \div (-2)^{2} +15-2(16-17)$ d) $(7-10)[49 \div (-7)+20\bullet 3-4\bullet 15-(-10)]$

5. Simplify each of the following expressions by combining like terms.(a) $-3(2x-5)+2(3x-4)-9+6x$
    (b) $-13(2x^{2})$ (c) $3a^{2}b+7a^{2}b+6ab-3ab$ (d) $3(x-1)-2(x+1)$

6. Evaluate $2y^{2} -6y-5$ for $y=-2$.

7. Perform the indicated operations.

(a) $\dfrac{-2}{3} \div (-12)$ (b) $-16\bullet 2\dfrac{1}{4}$ (c) $-\dfrac{5}{16} \div \dfrac{3}{8}$

(d) $5\dfrac{3}{5} \div \left(\dfrac{-7}{10}\right)$ (e) $-\dfrac{7}{8}+\dfrac{2}{3}$ (f) $-\dfrac{7}{12} -\dfrac{5}{8}$

(g) $-\dfrac{5}{9} -\left(\dfrac{-11}{12}\right)$ (h) $6\dfrac{2}{3} -1\dfrac{7}{8}$

(i) $\dfrac{\dfrac{3}{4}}{\dfrac{-5}{6}}$

8. Simplify. (a) $\dfrac{5}{8} \div \dfrac{1}{10} + \left(\dfrac{1}{3}\right)^2 \bullet \dfrac{3}{5}$

(b) $\dfrac{5}{8} \bullet \dfrac{3}{2} - \left(\dfrac{3}{4}\right)^2$

(b) $\dfrac{7}{20} - \left(\dfrac{1}{10} - \dfrac{2}{5}\right)^2$

9. Solve the following equations.

(a) $-5x - 3 = 9$

(b) $-\dfrac{5}{3}x + \dfrac{1}{2} = \dfrac{3}{4}$

(c) $-\dfrac{1}{2}(x+1) = \dfrac{1}{3}(x-1)$

(d) $-2 - 5(x-3) = 8$

(e) $9x + 2 = 6x - 13$ (f) $6 - 1(2+3x) - (-4x) = -3(x-2) - 4$ (g) $-\dfrac{3}{5}y == \dfrac{12}{10}$ (h) $\dfrac{4}{5} = -\dfrac{2}{3} - 11x$

10. In each pair of numbers, which number is larger?
a) $258.068, 258.86$

b) $-0.574, -0.575$

11. A student missed 6 problems on a mathematics test and received a grade of 85%. If all the problems were of equal value, how many problems were on the test?

12. Evaluate $-2x - y + 4$ for $x = -4$ and $y = 3$

13. Write the decimal 29.45 as a mixed number in the lowest terms.

14. Write 0.0107 in words.

15. Arrange in the order from the smallest to largest. $0.63, 0.631, \dfrac{3}{5}, \dfrac{9}{16}, 0.6299$.

16. A circle has diameter 44yd. Find the circumference of the circle. Use $\pi = 3.14$.

17. Find the circumference of a circle with radius 4inch. (Use $\pi = 3.14$).

18. John bought 9.85 pounds of apples at $4.25 per pound. How much did he pay to nearest cent?

19. Find the unknown number in the following proportion. (a) $\dfrac{3\frac{1}{5}}{9} = \dfrac{16}{x}$ (b) $\dfrac{6\frac{1}{4}}{5} = \dfrac{45}{x}$

20. If Tom can run x miles in 15 minutes, how far can he run in 45mintues?

21. A salon plays taped music constantly. Each tape plays for $1\dfrac{1}{4}$ hours. How many tapes are played during $8\dfrac{3}{4}$ hours?

22. Carmen loaned $ 5000 to a friend for 6 months at an interest rate of 8%. Find the simple interest.

23. How much cash would you need to buy a used car for $6000 if the sales tax is calculated at 5%, the license fee is $9, and your credit union will let you borrow 80% of your expenses?

24. Twice a number plus 5 is equal to 20 more than the number. What is the number?

25. Twice the difference between a number and 5 is equal to 6 times the number plus 14. What is the number?

26. Sven less than four times a number is equal to twice the number increased by three. Find the number.

27. Find the three consecutive odd integers such that the sum of the first and third is equal to 27 less than 3 times second.

28. It takes $\dfrac{3}{4}$ yd of ribbon to make bow. How many bows can be from 9 yards of ribbon?

29. One side of the triangle is 2 ft more than another side and the third side is 5 ft less than the less than the sum of the other two sides. If the perimeter is 55 ft, what is the length of each side?

30. Round 13.0693 to the nearest hundredth.

31. Evaluate $-4s^2 r$ when $r = 6$ and $s = -3$

32. Find the perimeter of a rectangular floor that measures 12ft by 9ft.

33. Find the complement of a 42^0 angle.

34. Find the supplement of 68^0 angle.

35. Write 32% as a decimal.

36. Write 0.3125 as a percent.

37. Write $\dfrac{7}{8}$ as a percent.

38. 520 is what percent of 2600/

39. Find the sale price of an item whose original cost is $96 and the rate of discount is 12%.

40. Convert 21qt to gallons.

41. Convert 27in to feet.

42. Convert 7mm to centimeters.

43. Convert 2.96g to milligrams.

44. Fill in the missing values.

(a) 65cm = _____m   (b) $9.6 cm^2 =$ _____ mm^2

45. A loan of $2,000 is due in 6 months with annual interest rate of 10%. Find the total amount that will be due.

46. Translate the following sentence into an equation and solve it: when 3 times a number is decreased by 11, the result is twice the number minus 7.

47. The width of a rectangular garden plot is 4ft less than the length. The perimeter of the plot is 44ft. fund the length and width.

48. Evaluate (a) $2^{-1} - 5^{-1}$ (b) $3^{-1} - 2^{-2} + 5^0$

49. simplify (a) $(5x^2)(-3x^4)$ (b) $-2x(x^2 y^3)^2$

50. Write 0.00012589 in scientific notation.

51. Write 25,869,000 in scientific notation.

52. Write 5.245×10^{-4} in standard form.

53. Write 1.00125×10^5 in standard form.

54. Simplify each expression so that answer conations only nonnegative exponents.

(a) $\left(x^{-5}\right)^3$ (b) $\left(y^3 \bullet y^2\right)^0$ (c) $t^{-2} \bullet t^{-3} \bullet t^{-4}$ (d) $\dfrac{x^6}{x^3}$ (e) $\dfrac{x^6}{\left(x^{-2}\right)^{-4}}$

55. Perform the indicated operations (a) $(3x - 7)(x - 1)$ (b) $(x - 2)^2$ (c) $-2x(5x^2 - 3x - 7)$

(c) $(2x - 5)^2$ (d) $\left(-4x^3 + 7x^2 - 2x + 8\right) - \left(6x^3 - 7x^2 + 2x - 7\right)$
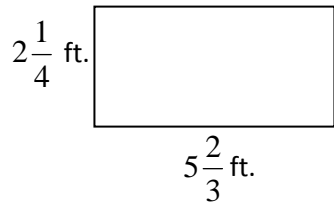
56. The triangles in each exercise are similar. Find the missing length.

5   x   y   12

6   15
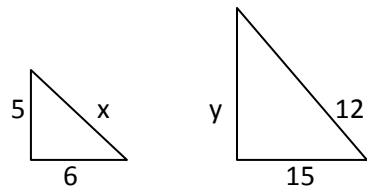
57. Find the missing leg of the given right angle triangle.

8   10

X
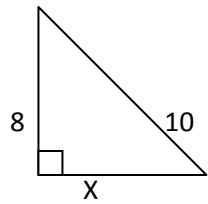
58. Find the area of the rectangle below.

$2\frac{1}{4}$ ft.

$5\frac{2}{3}$ ft.

59. Find the perimeter of the rectangle.

$2\frac{1}{4}$ ft.

$5\frac{2}{3}$ ft.
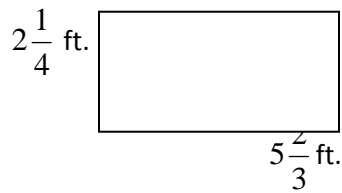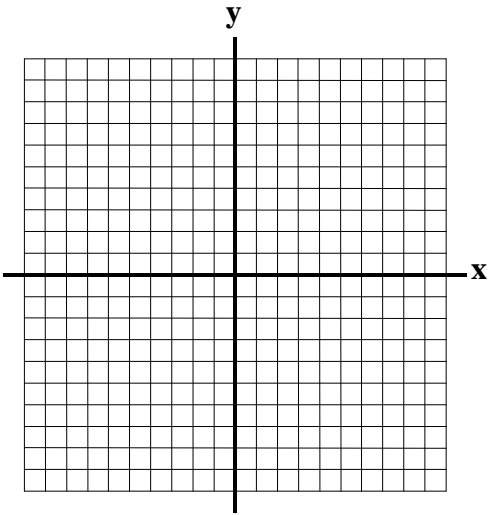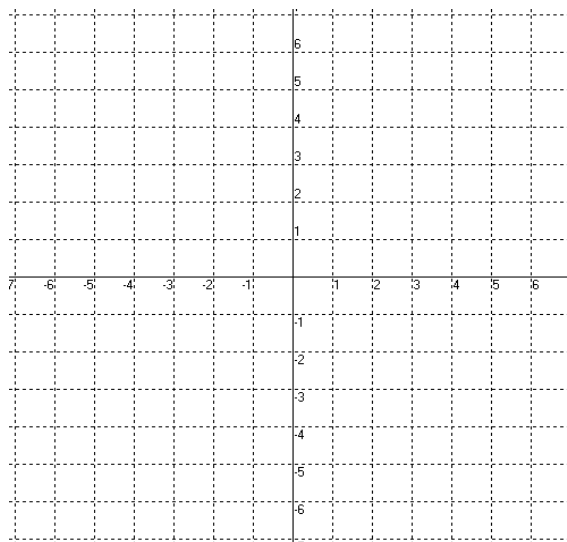
60. For the given linear equation fill in the table so that the corresponding points will lie on the graph of the given equation and then graph the line for that equation. $-2x + 3y = 6$

x	y	(x,y)
0		
3		
	0	

y

x

61. For the equation $y = 2x - 3$, complete the table below, and then graph the equation in the rectangular coordinate system. Label each of your ordered pairs on the graph.
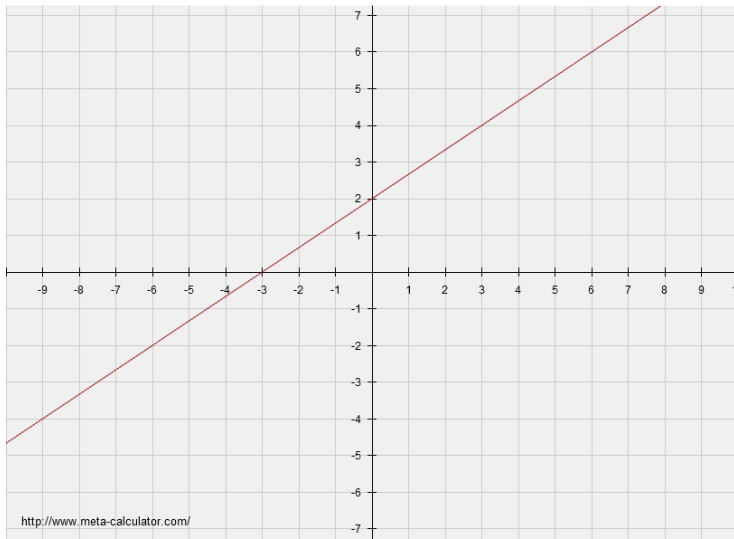
x	y	(x,y)
-1		
0		
	5	

Math practice Test answers

Pre-algebra Math test

1. a) <,   b) <,   c)<,   d) >   e)=
2. a) -8,   b) 13,   c)-8,   d)-5,   e)-24,   f)-1
3. a)-10,   b)18,   c) 160,   d)-7   e) undefined
4. a)-3,   b) 49,   c) 8,   d) -9
5. a)6x-2,   b) -26x^2,   c)10a^2 b+3ab,   d)x-5
6. 15
7. a) 1/18,   b)-36,   c) -5/6,   d)-8,   e)-5/24,   f) -29/24 ,   g)13/36,   h) 19/24   i)-9/10
8. a) 6 19/69,   b) 3/8,   c)13/50,
9. a)-12/5,   b)-3/20,   c)-1/5,   d) 1,   e)-5,   f)-1/2,   g)-2,   h)-2/15
10. a)258.86,   b) -0.574
11. 40
12. 9
13. $29\dfrac{9}{20}$
14. One hundredth seven
15. 9/16, 3/5, 0.6299, 0.63, 0.631
16. 138.16 yd
17. 25.12 inch
18. $41.86
19. a) 45,   b)36
20. 3x
21. 7
22. $200
23. $ 1261.80
24. 15

25. -6

26. 5

27. 25,27,29

28. 12

29. 14,16,25

30. 13.07

31. -216

32. 42

33. 48

34. 112

35. 0.32

36. 31.25%

37. 87.5%

38. 20%

39. 84.48

40. 5.25

41. 2.25

42. 0.7

43. 2960

44. a)0.65m,　　　　b) 960 mm^2

45. 2100

46. 4

47. 13by9

48. a)3/10,　　　b) 13/12

49. -15x^6　　　　b)$-2x^5y^6$

50. 1.2589x10^{-4}

51. 2.5869x10^7

52. 0.0005245

53. 100125

54. a) $1/x^{15}$,　　　b) 1,　　　c)$1/t^9$,　　　d) x^3,　　e) $1/x^2$

55. a) 3x^2-10x+7,　　　b)x^2-4x+4,　　　c) -10x^3+6x^2+14x,　　　d) 4x^2-10x+25,　　　e)-10x^3+14x^2-4x+15

56. x=4.8 , y=12.5

57. x=6

58. $12\dfrac{3}{4}$ sq ft

59. $15\dfrac{5}{6}$

60.

x	y	(x,y)
0	2	(0,2)
3	4	(3,4)
-3	0	(-3,0)

61.

x	y	(x,y)
-1	-5	(1,-5)
0	-3	(0,-3)
4	5	(4,5)