Basic Algebra II
Summer Packet

Please show <u>all work</u> in the space provided. Do not leave any questions blank. If you cannot complete the entire question please do as much work as you can.

1. Change $\frac{1}{5}$ to a percent.

a) 25% b) 20% c) 5% d) .2% 1._____

2. Change 47% to a decimal.

a) 47.0 b) 4.7 c) 0.47 d) 0.047 2._____

3. Change 2.15 to a fraction.

a) $2\frac{1}{5}$ b) $2\frac{2}{3}$ c) $2\frac{3}{200}$ d) $2\frac{3}{20}$ 3._____

4. Change $\frac{3}{8}$ to a decimal.

a) $2.6\overline{6}$ b) 3.75 c) 0.375 d) 0.0375 4._____

5. Change 126% to a decimal.

a) 0.126 b) 1.26 c) 12.6 d) 126.00 5._____

6. Simplify $4-2(10-5)+3^2$

a) 19 b) 3 c) 16 d) 9 6._____

7. Simplify $5\times 6\div 2\times 3$

a) 5 b) 6 c) 45 d) $\frac{1}{5}$ 7._____

8. Simplify by combining like terms: $3m^2+4n^4-m^2-4n^4$

a) $2m^4$ b) $4m^4$ c) $2m^2$ d) $2m^2+8m^4$ 8._____

9. Simplify by combining like terms: $-4mn+3m+6mn+2mn$

a) $5m^2n+2m^2n^2$ b) $4mn+3m$

b) c) $-4mn+3m+8mn$ d) $7mn$ 9._____

10. Evaluate $-3m^2+n$ when $m=2, n=-4$.

a) -16 b) 40 c) 32 d) -40 10._____

11. Simplify $\dfrac{4x^5y^3}{6x^7y^2}$

a) $2x^{12}y^5$ b) $\dfrac{2y}{3x^2}$ c) $\dfrac{2x^2}{3y}$ d) $\dfrac{x^2}{2y}$ 11._____

12. Simplify: $\left(4x^2\right)\left(2x^5\right)$

a) $6x^7$ b) $8x^{10}$ c) $6x^{10}$ d) $8x^7$ 12._____

13. Simplify: $\left(2ab\right)\left(-4a^4b\right)$

a) $-2a^4b^2$ b) $-8a^4b^2$ c) $-8a^5b$ d) $-8a^5b^2$ 13._____

14. Distribute: $4x\left(x+7\right)$

a) $4x^2+28x$ b) $4x^2+7$ c) $5x+7$ d) $5x+28x$ 14._____

15. Distribute: $6n^3\left(n^2-3n+2\right)$

a) $6n^5-3n+2$ b) $6n^5-18n^3+2$

c) $6n^6-18n^4+12n^3$ d) $6n^5-18n^4+12n^3$ 15._____

16. Multiply: $(x+3)(x-1)$

a) x^2-3 b) x^2+2x-3

c) x^2+4x-3 d) x^2+2x+3 16._____

17. Multiply: $(3x+4)(2x+3)$

a) $6x^2+17x+12$ b) $6x^2+14x+7$

c) $5x^2+17x+7$ d) $5x+12$ 17._____

18. Factor x^2-36

a) $(x+6)(x+6)$ b) $(x+6)(x-6)$

c) $x+6$ d) $(x-36)(x+36)$ 18._____

19. Factor $x^2+7x+12$

a) $(x+12)(x+1)$ b) $(x+2)(x+6)$

c) $(x+4)(x+3)$ d) $(x+6)(x+6)$ 19._____

20. Factor $2x^2 + x - 6$

a) $(x-6)(x+1)$ b) $(x-3)(x+2)$

c) $(2x+3)(x-2)$ d) $(2x-3)(x+2)$ 20._____

21. Write the algebraic expression for "the product of a number and four".

a) $\frac{n}{4}$ b) $4n$ c) $n+4$ d) $n-4$ 21._____

22. Write the algebraic expression for "two times the sum of a number and five".

a) $2(n+5)$ b) $2n+5$ c) $2 \times n + 5$ d) $2 \times 5n$ 22._____

23. Solve. $2n - 5 = 7$

a) $n = 1$ b) $n = 6$ c) $n = 8\frac{1}{2}$ d) $n = -2\frac{1}{2}$ 23._____

24. Solve. $\frac{2}{5}x - 7 = 41$

a) $x = 120$ b) $x = 240$ c) $x = 106$ d) $x = 99$ 24._____

25. Solve. $m + 5(m - 1) = 7$

a) $m = 2\frac{1}{3}$ b) $m = -4\frac{1}{3}$ c) $m = 2$ d) $m = 1\frac{1}{3}$ 25._____

26. Solve. $6x + 3 = 8x - 21$

a) $x = -9$ b) $x = 9$ c) $x = 12$ d) $x = -12$ 26._____

27. Solve. $\frac{n}{3} + 5 \le -4$

a) $n \le -3$ b) $n \le -27$ c) $n \le 3$ d) $n \le -17$ 27._____

28. Solve. $-4d - 7 > 9$.

a) $d > -4$ b) $d > -\frac{1}{2}$ c) $d < -4$ d) $d < 4$ 28._____

29. Solve for *x*. $ax + b = c$

a) $x = c - a - b$ b) $x = \frac{cb}{a}$ c) $x = \frac{c}{a} - b$ d) $x = \frac{c - b}{a}$ 29._____

30. Solve for *h*. $A = \frac{1}{2}bh$

a) $h = \frac{1}{2}Ab$ b) $h = \frac{2A}{b}$ c) $h = A - \frac{1}{2}b$ d) $h = \frac{A - b}{\frac{1}{2}}$ 30._____

31. Solve. $\frac{x+2}{20} = \frac{1}{4}$

a) $x = 3$ b) $x = 4\frac{1}{2}$ c) $x = 78$ d) $x = 6$ 31._____

32. Solve. $\frac{x+1}{5}=\frac{x}{4}$

a) $x=1$ b) $x=9\frac{1}{2}$ c) $x=4$ d) $x=6\frac{2}{3}$ 32._____

33. A single batch of cookies calls for $2\frac{1}{2}$ cups of flour. If you want to triple the recipe, how much flour should you use?

a) $6\frac{1}{2}$ b) $7\frac{1}{2}$ c) 5 d) 8 33._____

34. Find the mode: 2,2,3,4,5,6,9

a) 4 b) 7 c) 2 d) $4\frac{3}{7}$ 34._____

35. Find the median: 5, 7, 2, 9, 10

a) 7 b) 2 c) $6\frac{3}{5}$ d) 8 32._____

36. Find the mean: 1, 4 , 4, 6, 6, 6, 8

a) 6 b) 3 c) 7 d) 5 35._____

37. Find the slope between the points $(4,7)$ and $(6,-1)$

a) -4 b) $-\frac{1}{4}$ c) 4 d) 5 37._____

38. The graph of a linear equation with a negative slope should be a(n) _____ line.

a) upward sloping b) downward sloping

c) vertical d) horizontal 38._____

39. Find the slope of the line parallel to $y=\frac{2}{3}x-7$.

a) -7 b) $-\frac{3}{2}$ c) 7 d) $\frac{2}{3}$ 39._____

40. Find the slope of the line perpendicular to $y=4x+2$.

a) 2 b) $-\frac{1}{4}$ c) 4 d) -2 40._____

41. Rewrite $4x-5y=10$ in slope-intercept form; $y=mx+b$.

a) $y=-4x-2$ b) $y=-4x-10$

c) $y=\frac{4}{5}x-2$ d) $y=-\frac{4}{5}x+2$ 41._____

42. Rewrite $y-4=2(x+3)$ in slope-intercept form; $y=mx+b$.

a) $y=2x+10$ b) $y=2x+7$

c) $y=2x+14$ d) $y=2x+2$ 42._____

43. Mike has $100 saved in his bank account and plans to save $25 per week from his part time job. His bank balance, y, for any number of weeks, x, can be represented by which equation?

a) $y=100x+25$ b) $y=25x+100$

c) $x=25y+100x$ d) $x=100+25y$ 43._____

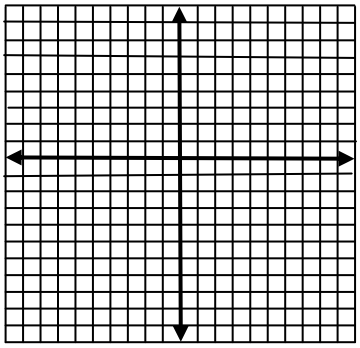
44. Paul weighs 170 pounds. Lisa weighs x pounds. If together they weigh 283 pounds, which equation could be used to represent this situation?

a) $283+x=170$ b) $x=283+170$

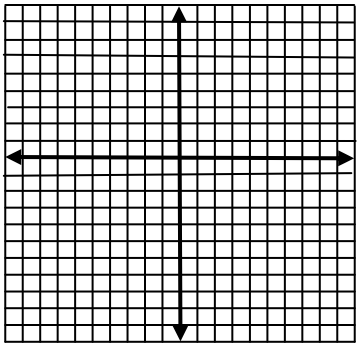
c) $283-x=170$ d) $170-x=283$ 44._____

45. Graph and label the following points on the coordinate plane.

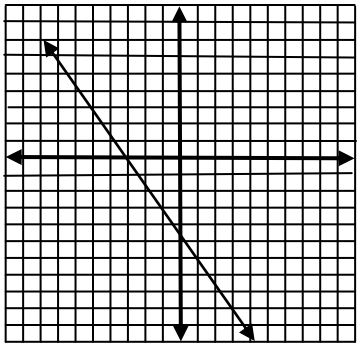
A(-3,-5) B(3,-1) C(0,4) D(-2,5)



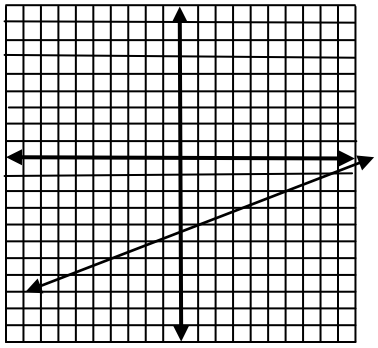
46. Graph the line that goes through (-2,3) and has slope $-\frac{2}{3}$



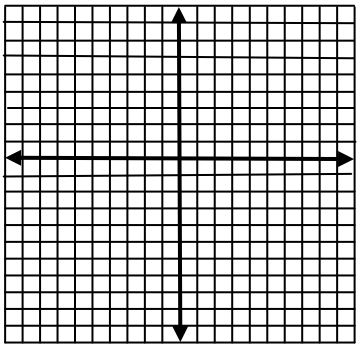
47. Find the slope of the line.



48. Find the slope of the line.



49. Graph $y = -3x + 2$



50. Graph $y = \frac{3}{4}x - 3$