Summer Assignment (Algebra I Prequisite Skills) Date_____ Period____

This summer assignment is due the first full week of school (by September 6th). A TEST on these Algebra I skills will be given the second week of school. Please be advised if you took INTEGRATED ALGEBRA I CP AND you have signed up for Algebra II CP (a higher level course), it is YOUR responsibility to know all of the prerequisite material from Algebra I CP. PLEASE SHOW ALL WORK ON A SEPARATE PIECE OF PAPER for all problems.

Solve each equation.

1) $38 = 5(2 + n) - 3(6n - 5)$

2) $7(2k - 1) - 6(3k - 3) = 3$

3) $1 - 2p = 2 - 2p$

4) $3a + 10 = 6a - 5a$

5) $-1 - 7(n + 3) = -8 - 5n$

6) $35 - 7b = 3 - 2(4 + b)$

7) $5 - 4(2b + 2) = -4b - 3(1 - 6b)$

8) $5(x - 1) + 6 = 5(x - 1) + 6$

9) $-8(2b - 1) = -4(-4b + 6)$

10) $8(-5b + 5) = -5(b + 6)$

Simplify. Your answer should contain only positive exponents.

11) $4x^3 \cdot 4x^{-3}$

12) $yx^{-2} \cdot 4x^2y^4 \cdot 3x^4y^2$

13) $(3a^3)^4$

14) $\dfrac{2p^4}{4p^2}$

15) $\left(\dfrac{2m}{2m \cdot 2m^3}\right)^3$

16) $(2x^{-2}y^{-4})^4$

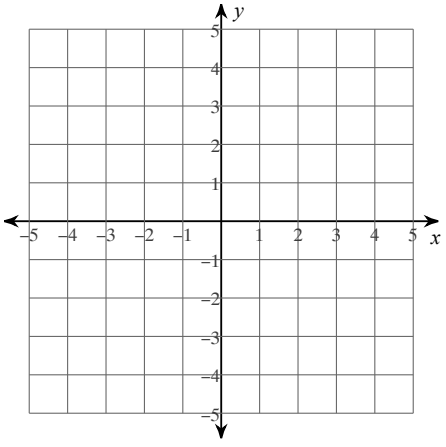
17) $\dfrac{y^4}{2yx^4}$

18) $\dfrac{3m^2n^{-3}}{m^3n^{-2}}$

Solve each system by graphing.

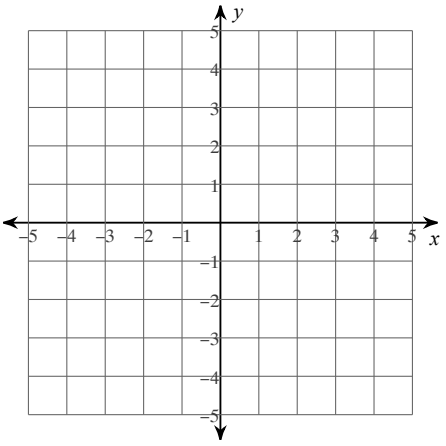
19) $y = \frac{5}{2}x + 2$

$y = \frac{5}{2}x + 4$



20) $2x - 3y = 9$

$4x + 3y = 9$



Solve each system by substitution.

21) $y = x - 4$

$y = 2x - 8$

22) $y = -2x - 7$

$3x - 2y = 0$

Solve each system by elimination.

23) $x + y = -7$
$-7x + 5y = -23$

24) $4x - y = 6$
$-5x - 3y = 1$

25) $-9x - 2y = -7$
$7x + 5y = -29$

26) $-3x - 4y = 16$
$-2x - 6y = 4$

27) The local amusement park is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 6 vans and 9 buses with 354 students. High School B rented and filled 2 vans and 6 buses with 220 students. Each van and each bus carried the same number of students. Find the number of students in each van and in each bus.

28) Elisa and Mofor each improved their yards by planting rose bushes and ivy. They bought their supplies from the same store. Elisa spent $66 on 12 rose bushes and 1 pot of ivy. Mofor spent $34 on 2 rose bushes and 4 pots of ivy. Find the cost of one rose bush and the cost of one pot of ivy.

Simplify each sum/difference.

29) $(6y^2 + 2x^4y^2) + (3y^2 - 5x^4 + 7x^4y^2)$

30) $(3n^2 - 2m^4) + (4n^2 - 7m^3n^4 - 7m^4)$

31) $(4p^3 + 3 + 8p^4) - (4p^3 - 8 - 7p^4)$

32) $(8r^3 + 6r^4 + 2r^2) - (2r^3 - 7r^2 - 5r)$

Find each product.

33) $(3n + 1)(2n + 3)$

34) $(7k - 2)(8k + 6)$

35) $(5x + 2)^2$

36) $(8v + 3)(8v - 3)$

37) $(5b - 8)(5b^2 - 3b + 3)$

38) $(2m - 4)(3m^2 + 5m - 1)$

Factor each completely.

39) $v^2 - 7v$

40) $r^2 - 3r - 18$

41) $3x^2 + 3x - 36$

42) $6x^2 + 66x + 60$

43) $v^2 - v - 2$

44) $6x^2 - 60x + 54$

45) $n^2 - 5n - 14$

46) $v^2 + 5v - 24$

Factor by grouping.

47) $7x^3 + 21x^2 + 5x + 15$

48) $16x^3 + 20x^2 - 12x - 15$

49) $7b^3 - 8b^2 - 28b + 32$

50) $56r^3 + 49r^2 + 64r + 56$

51) $8n^3 - 40n^2 - 5n + 25$

52) $3x^3 + 4x^2 + 9x + 12$

Factor each completely.

53) $5v^2 - 8v$

54) $5v^2 - 32v - 64$

55) $2v^2 + 7v - 72$

56) $3v^2 - 10v + 3$

57) $42v^3 - 414v^2 + 324v$

58) $42v^3 + 198v^2 - 324v$

59) $8n^3 - 20n^2 - 28n$

60) $18a^3 - 32a$

Solve each equation by factoring.

61) $n^2 + 4n = 0$

62) $b^2 + 4b - 12 = 0$

63) $8b^2 + 88b + 222 = -2$

64) $3x^2 - 18x - 7 = -7$

65) $k^2 - 6k + 16 = 8$

66) $5x^2 - 10x - 237 = 3$

67) $5p^2 + 25p + 18 = -2$

68) $8p^2 - 96p + 273 = -7$

69) $7v^2 - 35v = 98$

70) $8a^2 = -56a - 48$