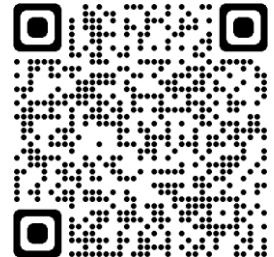Name_____

Incoming Geometry CP Summer Work

-Show your work for answering all these questions. Write the answer in the space provided. There will be a test on this material during the first week of school. Are you stuck on some of the questions?? Sign up for math camp here!!

Solve the following equations for x. SHOW YOUR WORK. Don't just write the final answer. *Remember to distribute if there are parentheses*

1) $5x + 4 = 3x + 7$

2) $5x + 4 = x - 2$

3) $2x - 8 = x + 50$

4) $30 = -5(6n + 6)$

5) $5x + 4 + x - 2 + 3x + 7 = 180$

6) $6x - 6 + 3x + 1 = 43 + x$

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

8) $2x + 1 + 3x + 19 + 90 = 180$

9) $\frac{7}{12} = \frac{7}{9}m$

10) $\frac{20}{3} = x + \frac{19}{6}$

11) $-\frac{22}{9}r = \frac{11}{9}$

12) $\frac{50}{3}x = -\frac{7}{10}$

For the next problems, you can leave your answer as a square root if it's not a perfect square*

13) $8n^2 - 4 = 532$ *Remember to get rid of a squared, you take the square root*

14) $10n^2 - 10 = 470$

15) $-7n^2 = -448$

16) $3 - 4x^2 = -8$

Factoring Review. Factor the problems below. There is a mix of regular factoring, AC method, difference of squares and grouping.

17) $m^2 + 12m + 32$

18) $m^2 + 13m + 40$

19) $3m^2 - 17m - 56$

20) $25x^2 + 30x + 9$

21) $5n^2 - 7n$

22) $81r^2 - 1$

23) $21mn - 14m - 3n^2 + 2n$

24) $12b^3 - 9b^2 + 16b - 12$

25) $x^4 - 7x^3 + 10x^2$

26) $49 - 25m^2$

Solve the equations by factoring.

27) $b^2 - 7b + 6 = 0$

28) $5x^3 - 11x^2 - 12x = 0$

29) $x^3 + 5x^2 - 4x - 20 = 0$

30) $8r^2 = 24r - 16$

31) $7x^2 + 7x = 42$

32) $7n^2 - 1 = 26n + 7$

Simplifying the following square roots.

33) $\sqrt{18}$

34) $\sqrt{12}$

35) $\sqrt{45}$

36) $\sqrt{216}$

37) $\sqrt{343}$

38) $9\sqrt{245}$

39) $2\sqrt{36}$

40) $2\sqrt{200}$

41) $3\sqrt{405}$

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Rationalize the denominator for the following problems.

42) $\dfrac{3}{\sqrt{2}}$

43) $\dfrac{5}{3\sqrt{2}}$

44) $\dfrac{3\sqrt{4}}{\sqrt{5}}$

45) $\dfrac{4\sqrt{4}}{\sqrt{5}}$

46) $\dfrac{4\sqrt{3}}{5\sqrt{3}}$

47) $\dfrac{5+\sqrt{2}}{\sqrt{18}}$

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48) $\dfrac{5-4\sqrt{2}}{\sqrt{6}}$

49) $\dfrac{-5+\sqrt{5}}{\sqrt{13}}$

50) $\dfrac{2-4\sqrt{3}}{\sqrt{3}}$

Answer key

1) x = 3/2   2) x = -3/2   3) x = 58   4) n = -2   5) x =19   6) x = 6

7) x = 2   8) x = 14   9) m = ¾   10) x = 7/2   11) r = -18   12) x = -21/500

13) n= +and - $\sqrt{67}$ 14) n= +and - $4\sqrt{3}$ 15) n= + and – 8

16) n = + and - $\dfrac{\sqrt{11}}{2}$ 17) (m+8)(m+4)   18) (m+5)(m+8)   19) (3m+7)(m-8)

20) (5x+3)^2   21) n(5n-7)   22) (9r-1)(9r+1)   23) (3n-2)(7m-n)

24) (4b-3)(3b^2+4)   25) x^2(x-2)(x-5)   26) (7+5m)(7-5m) 27) b = 6, b = 1

28) x = 0, -4/5, 3   29) x = -5, -2, 2   30) r = 2, 1   31) x = 3, -2   32) n =4, -2/7

33) $3\sqrt{2}$ 34) $2\sqrt{3}$ 35) $3\sqrt{5}$ 36) $6\sqrt{6}$ 37) $7\sqrt{7}$ 38) $63\sqrt{5}$

39) 12   40) $20\sqrt{2}$ 41) $27\sqrt{5}$ 42) $\dfrac{3\sqrt{2}}{2}$ 43) $\dfrac{5\sqrt{2}}{6}$ 44) $\dfrac{3\sqrt{20}}{5}=\dfrac{6\sqrt{5}}{5}$

45) $\dfrac{8\sqrt{5}}{5}$ 46) 4/5   47) $\dfrac{15\sqrt{2}+6}{18}$ 48) $\dfrac{5\sqrt{6}-8\sqrt{3}}{6}$ 49) $\dfrac{-5\sqrt{13}+65}{13}$ 50) $\dfrac{2\sqrt{3}-12}{3}$