

Algebra 2

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Solving for X Week 2

Solve each equation.

1)  $\frac{|4-3n|}{5} = 1$   $|4-3n| = 5$   
 $4-3n=5$   $4-3n=-5$   
 $-3n=1$   $-3n=-9$   
 $n=-1/3$   $n=3$

2)  $\frac{|2-7x|}{5} = 3$   $|2-7x| = 15$   
 $2-7x=15$   $2-7x=-15$   
 $-7x=13$   $-7x=-17$   
 $x=-13/7$   $x=17/7$

3)  $\frac{|4v-9|}{6} = 5$

4)  $10(p-8) = -5(8p-8) - 10p$

5)  $5n - 8n = -8(-10 + 7n) + 6(9n - 10)$

6)  $-4(m-10) + 8m = -6(2m+12)$

7)  $-3a + 2(3a+3) = -2(-3a+12)$

8)  $-5(5p+1) = 5(p-1)$

Solve each equation by factoring.

9)  $35p^2 - 30p + 9 = 2p + 4$

10)  $11k^2 - 33k + 18 = 2k^2$

11)  $5x^2 + 20x + 2 = -2x - 6$

12)  $5v^2 + v = 0$

Solve each equation by taking square roots.

13)  $2b^2 - 10 = 688$   $b^2 = 349$   
 $2b^2 = 698$   $b = \pm \sqrt{349}$

14)  $25x^2 - 2 = 7$   $x = \pm 3/5$   
 $25x^2 = 9$   
 $x^2 = 9/25$

Solve each equation with the quadratic formula.

15)  $10a^2 - 4a = 4$

16)  $8x^2 - 10x = -10$

see pg 2

Solve each equation. Remember to check for extraneous solutions.

17)  $\frac{2}{n-2n} = \frac{1}{2n} + 3\left(\frac{2n}{2n}\right)$   $4 = 1 + 6n$   
 $3 = 6n$   
 $1/2 = n$

18)  $\frac{5}{3x^2-3x} = \frac{1}{3x^2-3x} + \frac{1}{3x} \left(\frac{x-1}{x-1}\right)$   $5 = 1 + x - 1$   
 $5 = x$

19)  $\frac{a+1}{-18a} = \frac{a+5}{-18a} - \frac{1}{3} \left(\frac{6a}{6a}\right)$   
 $a+1 = a+5 - 6a$   
 $-4 = -6a$   
 $2/3 = a$

20)  $1 = \frac{6}{n+1} - \frac{n+6}{n+1}$   $n = -1/2$   
 $n+1 = 6 - n - 6$   
 $2n = -1$   
 $n = -1/2$

## Solve for x week 2

4.  $10p - 80 = -40p + 40 - 10p$

$$60p = 120$$

$$\boxed{p = 2}$$

5.  $-3n = 80 - 56n + 54n - 60$

$$-n = 20$$

$$\boxed{n = -20}$$

6.  $-4m + 40 + 8m = -12m - 72$

$$4m = -12m - 112$$

$$16m = -112$$

$$\boxed{m = -7}$$

7.  $-3a + 6a + 6 = 6a - 24$

$$-3a = -30$$

$$\boxed{a = 10}$$

8.  $-25p - 5 = 5p - 5$

$$-30p = 0$$

$$\boxed{p = 0}$$

9.  $35p^2 - 32p + 5 = 0$

$$(5p - 1)(7p - 5) = 0$$

$$\boxed{p = 1/5 \text{ ; } 5/7}$$

10.  $9k^2 - 33k + 18 = 0$

$$3(3k^2 - 11k + 6) = 0$$

$$3(3k - 2)(k - 3) = 0$$

$$\boxed{k = 2/3 \text{ ; } 3}$$

11.  $5x^2 + 22x + 8 = 0$

$$(5x + 2)(x + 4) = 0$$

$$\boxed{x = -4, -2/5}$$

12.  $v(5v + 1) = 0$

$$\boxed{v = 0, -1/5}$$

15.  $10a^2 - 4a - 4 = 0$

$$x = \frac{4 \pm \sqrt{16 - 4(10)(-4)}}{2(10)}$$

$$x = \frac{4 \pm \sqrt{176}}{20}$$

$$x = \frac{4 \pm 4\sqrt{11}}{20} = \boxed{\frac{1 \pm \sqrt{11}}{5}}$$

16.  $8x^2 - 10x + 10 = 0$

$$x = \frac{10 \pm \sqrt{100 - 4(8)(10)}}{2(8)}$$

$$x = \frac{10 \pm \sqrt{-220}}{16}$$

$$x = \frac{10 \pm 2i\sqrt{55}}{16} = \boxed{\frac{5 \pm i\sqrt{55}}{8}}$$