Bell Ringer

Tuesday 10/2

Factor each.

1. $b^2 - 12b + 36$

$-6 \cdot -6 = 36$, $-6 + -6 = -12$

$(b-6)(b-6)$

$(B-6)^2$

2. $16v^2 - 81$

$16v^2 + 0v - 81$

$(4v+9)(4v-9)$

3. $18z^2 - 2$

$2(9z^2 - 1)$

$= 2(3z+1)(3z-1)$

4. $4c^2 + 28c + 49$

$2c \cdot 7 = 14c$, $14c + 14c = 28c$

$(4c^2 + 14c)(14c + 49)$

$2c(2c+7) + 7(2c+7)$

$(2c+7)(2c+7) = (2c+7)^2$

correct pink ws 3.7B

Name: _____ Hour: _____

Sec. 3.7B: Solving Quadratics Review

Solve using the method of your choice. Show all of your work.

1. $5x^2-2x-3=0$

-15, -5, 3, -2

$(5x^2-5x)+(3x-3)=0$

$5x(x-1)+3(x-1)=0$

$(x-1)(5x+3)=0$

$x=1, -\frac{3}{5}$

$x-1=0$ $5x+3=0$

$5x=-3$

$\frac{5x}{5}=\frac{-3}{5}$

2. $x^2+5x+5=0$

3. $3x^2-9x-54=0$

4. $x^2-x=12$

5. $x^2+12x+36=5$

$a=1, b=12, c=31$

$-5 \quad -5$

$x^2+12x+31=0$

$x=\frac{-12\pm\sqrt{12^2-4(1)(31)}}{2(1)}$

$x=\frac{-12\pm\sqrt{20}}{2}$

$\sqrt{20}=2\sqrt{5}$

$x=\frac{-12\pm2\sqrt{5}}{2}=-6\pm\sqrt{5}$

6. $x^2-11x+24=0$

7. $x^2+15x+24=-32$

8. $x^2+7x+11=0$

9. $12x^2=-4x$

10. $(2x+1)(x-3)=0$

11. $(x+5)^2-12=0$

12. $x^2+3x=14$

13. $x^2-8x=-16$

14. $4x^2+8=-3x$

15. $6(x-4)^2+8=20$

16. $6x^2-54=0$

17. $3x^2+7x-24=-13x$

18. $7x^2-10=25$

19. $25x^2=121$

20. $2x^2+7x-4=0$

Name: KEY Hour: _____

Sec. 3.7B: Solving Quadratics Review

Solve using the method of your choice. Show all of your work.

1. $5x^2 - 2x - 3 = 0$ $a=5, b=-2, c=-3$

$x = \frac{2 \pm \sqrt{(-2)^2-4(5)(-3)}}{2(5)}$ $4+60$

$x = 1, -\frac{3}{5}$

$\frac{2 \pm \sqrt{64}}{10} = \frac{2 \pm 8}{10} = \frac{2+8}{10}, \frac{2-8}{10}$

$\frac{10}{10} = 1$ $\frac{-6}{10} = -\frac{3}{5}$

2. $x^2 + 5x + 5 = 0$ $a=1, b=5, c=5$

$x = \frac{-5 \pm \sqrt{5^2-4(1)(5)}}{2(1)}$ ✗ ← no options

$= \frac{-5 \pm \sqrt{45}}{2}$ $x = \frac{-5 \pm 3\sqrt{5}}{2}$

$\sqrt{45}$ → $3\sqrt{5}$

3. $\frac{3x^2 - 9x - 54 = 0}{3}$

$x^2 - 3x - 18 = 0$

$(x-6)(x+3) = 0$

$x-6=0$ $x+3=0$

$x = 6, -3$

4. $x^2 - x = 12$

$x^2 - x - 12 = 0$

$(x-4)(x+3) = 0$

$x-4=0$ $x+3=0$

$x = 4, -3$

5. $x^2 + 12x + 36 = 5$

$x^2 + 12x + 31 = 0$

$x = \frac{-12 \pm \sqrt{12^2-4(1)(31)}}{2(1)}$

$\sqrt{20} = 2\sqrt{5}$ (4 · 5, $2\sqrt{\ }$)

$\frac{-12 \pm \sqrt{20}}{2} = \frac{-12 \pm 2\sqrt{5}}{2} = -6 \pm \sqrt{5}$

6. $x^2 - 11x + 24 = 0$

$(x-8)(x-3) = 0$

$x = 3, 8$

7. $x^2 + 15x + 24 = -32$

$x^2 + 15x + 56 = 0$

$(x+7)(x+8) = 0$

$x = -7, -8$

8. $x^2 + 7x + 11 = 0$

$x = \frac{-7 \pm \sqrt{7^2-4(1)(11)}}{2(1)} = \frac{-7 \pm \sqrt{5}}{2}$

9. $12x^2 = -4x$

$12x^2 + 4x = 0$

$4x(3x+1) = 0$

$4x = 0$ $3x+1=0$

$x = 0, -\frac{1}{3}$

10. $(2x+1)(x-3) = 0$

$2x+1=0$ $x-3=0$

$x = -\frac{1}{2}, 3$

11. $(x+5)^2-12=0$

$\sqrt{(x+5)^2}=\sqrt{12}$ $\sqrt{12}=2\sqrt{3}$, $\sqrt{3}\approx 1.7$, $2\sqrt{3}\approx 3.4$

$x+5=\pm 2\sqrt{3}$

$-5 \quad -5$

$x=-5\pm 2\sqrt{3}$

12. $x^2+3x=14$

$x^2+3x-14=0$

$x=\frac{-3\pm\sqrt{3^2-4(1)(-14)}}{2(1)}$

$x=\frac{-3\pm\sqrt{65}}{2}$

$\sqrt{65}$, $5 < \sqrt{65} < 13$

13. $x^2-8x=-16$

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

$(x-4)(x-4)=0$

$x=4$

14. $4x^2+8=-3x$

$4x^2+3x+8=0$

$x=\frac{-3\pm\sqrt{3^2-4(4)(8)}}{2(4)}$

$x=\frac{-3\pm\sqrt{-119}}{8}$

No real solutions

15. $6(x-4)^2+8=20$

$6(x-4)^2=12$

$\sqrt{(x-4)^2}=\sqrt{2}$

$x-4=\pm\sqrt{2}$

$x=4\pm\sqrt{2}$

16. $6x^2-54=0$

$6(x^2-9)=0$

$\frac{6}{6}(x+3)(x-3)=\frac{0}{6}$

$(x+3)(x-3)=0$

$x=3,-3$

17. $3x^2+7x-24=-13x$

$3x^2+20x-24=0$

$x=\frac{-20\pm\sqrt{20^2-4(3)(-24)}}{2(3)}$

$=\frac{-20\pm\sqrt{688}}{6}=\frac{-20\pm 4\sqrt{43}}{6}=\frac{-10\pm 2\sqrt{43}}{3}$

$\sqrt{688}=4\sqrt{43}$, $4\cdot 172$, $4\cdot 43$

18. $7x^2-10=25$

$+10 \quad +10$

$\frac{7x^2}{7}=\frac{35}{7}$

$\sqrt{x^2}=\sqrt{5}$

$x=\pm\sqrt{5}$

19. $25x^2=121$

$\frac{25}{25} \quad \frac{25}{25}$

$\sqrt{x^2}=\sqrt{\frac{121}{25}}$

$x=\pm\frac{11}{5}$

20. $2x^2+7x-4=0$

$2x^2-1x+8x-4=0$

$x(2x-1)+4(2x-1)=0$

$(x+4)(2x-1)=0$

$x+4=0 \quad 2x-1=0$

$x=-4, \frac{1}{2}$

$-1 \cdot 8 = -8$, $-8+8=7$

QUIZ FRIDAY!!!

1. $3x^2 - 24x = 0$

$3x(x-8)=0$

$3x=0 \quad x-8=0$

$x=0, 8$

$10x^2 = 8x$

$-8x \quad -8x$

$10x^2 - 8x = 0$

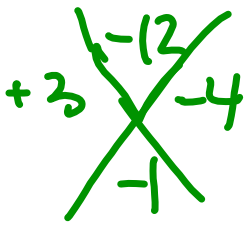
$2x(5x-4)=0$

$2x=0 \quad 5x-4=0$

$x=0, \frac{4}{5}$

4. $x^2 - x - 12 = 0$

$(x+3)(x-4) = 0$



$x+3=0$ $\quad x-4=0$

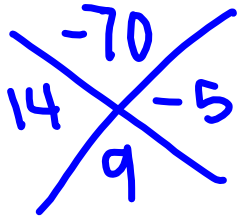
$-3 \quad -3 \quad +4 \quad +4$

$x=-3 \quad x=4$

7. $2x^2 + 9x = 35$

$-35 \quad -35$

$2x^2 + 9x - 35 = 0$



$(2x^2 + 14x)(-5x - 35) = 0$

$2x(x+7) - 5(x+7) = 0$

$(2x-5)(x+7) = 0$

$2x - 5 = 0 \qquad x + 7 = 0$

$x = \frac{5}{2} \qquad x = -7$

10. $24x^2 = 72$

$\frac{24x^2}{24} = \frac{72}{24}$

$\sqrt{x^2} = \sqrt{3}$

$x = \pm\sqrt{3}$

13. $x^2 - 8x = -5$

$+5 \quad +5$

$x^2 - 8x + 5 = 0$

$a = 1$

$b = -8$

$c = 5$

$$x = \frac{-(-8) \pm \sqrt{(-8)^2 - 4(1)(5)}}{2(1)}$$

$$x = \frac{8 \pm \sqrt{44}}{2} = \frac{8 \pm 2\sqrt{11}}{2}$$

$\sqrt{44} = 2\sqrt{11}$ (4 × 11, 2 × 2)

$$x = 4 \pm \sqrt{11}$$

due Friday

Name: _____ Hour: _____

QUIZ 3A REVIEW!!!!

Solve using the method of your choice. Show all of your work. ☺

1. $3x^2 - 24x = 0$
2. $10x^2 = 8x$
3. $5x^2 = 35x$
4. $x^2 - x - 12 = 0$
5. $x^2 + 8x + 5 = 25$
6. $6x - 9 = x^2$
7. $2x^2 + 9x = 35$
8. $3x^2 - 2x = 8$
9. $8x^2 - 6x + 1 = 0$
10. $24x^2 = 72$
11. $2x^2 = 32$
12. $3x^2 - 192 = 0$
13. $x^2 - 8x = -5$
14. $3x^2 - 2x - 6 = 0$
15. $2x^2 + 3x = 6$

Name: Key Hour: _____

QUIZ 3A REVIEW!!!!

Solve using the method of your choice. Show all of your work. ☺

1. $3x^2 - 24x = 0$

$3x(x-8)=0$

$\frac{3x}{3}=\frac{0}{3}$ $x-8=0$ $+8\ +8$

$x=0$ $x=8$

2. $10x^2 = 8x$

$10x^2-8x=0$

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

$2x=0$ $5x-4=0$

$x=0, \frac{4}{5}$

3. $5x^2 = 35x$

$5x^2-35x=0$

$5x(x-7)=0$

$5x=0$ $x-7=0$

$x=0, 7$

4. $x^2 - x - 12 = 0$

$(x-4)(x+3)=0$

$x-4=0$ $x+3=0$

$x=4, -3$

5. $x^2 + 8x + 5 = 25$

$-25\ \ -25$

$x^2+8x-20=0$

$(x+10)(x-2)=0$

$x+10=0$ $x-2=0$

$x=-10, 2$

6. $6x - 9 = x^2 - 6x + 9$

$-6x+9\ \ -6x+9$

$x^2-6x+9=0$

$(x-3)(x-3)=0$

$x-3=0$

$x=3$

7. $2x^2 + 9x = 35$

70, 14, −5, 9

$2x^2+9x-35=0$

$(2x^2+14x)-(5x-35)=0$

$2x(x+7)-5(x+7)=0$

$(2x-5)(x+7)=0$

$2x-5=0$ $x+7=0$

$x=5/2, -7$

8. $3x^2 - 2x = 8$

−24, −6, 4, −2

$3x^2-2x-8=0$

$(3x^2-6x)+(4x-8)=0$

$3x(x-2)+4(x-2)=0$

$(x-2)(3x+4)=0$

$x-2=0$ $3x+4=0$

$x=2, -4/3$

9. $8x^2 - 6x + 1 = 0$

8, −4, −2, −6

$(8x^2-4x)-(2x+1)=0$

$4x(2x-1)-1(2x-1)=0$

$(4x-1)(2x-1)=0$

$4x-1=0$ $2x-1=0$

$x=1/4, 1/2$

10. $24x^2 = 72$

$\frac{24}{24}\ \ \frac{24}{24}$

$\sqrt{x^2}=\sqrt{3}$

$x=\pm\sqrt{3}$

11. $2x^2 = 32$

$\frac{2}{2}\ \ \frac{2}{2}$

$\sqrt{x^2}=\sqrt{16}$

$x=\pm 4$

12. $3x^2 - 192 = 0$

$+192\ \ +192$

$\frac{3x^2}{3}=\frac{192}{3}$

$\sqrt{x^2}=\sqrt{64}$

$x=\pm 8$

13. $x^2 - 8x = -5$

$a=1\ \ b=-8\ \ c=5$

$x^2-8x+5=0$

$x=\frac{8\pm\sqrt{(-8)^2-4(1)(5)}}{2(1)}$

$x=\frac{8\pm\sqrt{44}}{2}=\frac{8\pm 2\sqrt{11}}{2}$

$\sqrt{44}=2\sqrt{11}$ (4 · 11; 4 = 2 · 2)

$x=4\pm\sqrt{11}$

14. $3x^2 - 2x - 6 = 0$

$a=3\ \ b=-2\ \ c=-6$

$x=\frac{2\pm\sqrt{(-2)^2-4(3)(-6)}}{2(3)}$

$x=\frac{2\pm\sqrt{76}}{6}$

$\sqrt{76}=2\sqrt{19}$ (4 · 19; 4 = 2 · 2)

$x=\frac{2\pm 2\sqrt{19}}{6}=\frac{1\pm\sqrt{19}}{3}$

15. $2x^2 + 3x = 6$

$a=2\ \ b=3\ \ c=-6$

$2x^2+3x-6=0$

$x=\frac{-3\pm\sqrt{3^2-4(2)(-6)}}{2(2)}$

$x=\frac{-3\pm\sqrt{54}}{4}$

$\sqrt{54}=3\sqrt{6}$ (9 · 6; 9 = 3 · 3)

$x=\frac{-3\pm 3\sqrt{6}}{4}$