Algebra 1 Name Key Block___

Unit 4A Review Solving Quadratics

Factor the quadratic.

1. $x^2 - 14x - 15$

(X+1)(X-15)

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

(3X-4)(X+2)

3. $5x^2 + 10x$

5X(X+2)

4. $x^2 - 9$

(X+3)(X-3)

Solve by factoring.

5. $x^2 + 3x - 10 = 0$

(X-2)(X+5)=0

X=2 X=-5

6. $5x^2 + 10x + 5 = 0$

X²+2X+1=0

(X+1)(X+1)=0

X=-1 X=-1

7. $5x^2 + 4x - 12 = 0$

(5X-6)(X+2)

$X=\frac{6}{5}$ X=-2

8. $2x^2 - 50 = 0$

$X=\pm 5$

Solve each equation by taking the square root.

9. $3x^2 = 27$

$X=\pm 3$

10. $x^2 - 4 = 21$

$X=\pm 5$

11. $(x + 8)^2 = 32$

$X=-8\pm 4\sqrt{2}$

12. $3(x - 2)^2 + 4 = 52$

X=6

X=-2

Solve each equation by completing the square.

13. $x^2 - 6x + 4 = 0$

$X = 3 \pm \sqrt{5}$

14. $3x^2 + 12x = -9$

$x^2 + 4x = -3$

$(x+2)^2 = 1$

$X = -3$ $X = -1$

15. Solve by using the quadratic formula.

$7x^2 + 5x - 1 = 0$

$X = 0.16$ $X = -0.87$

16. Solve using any method.

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

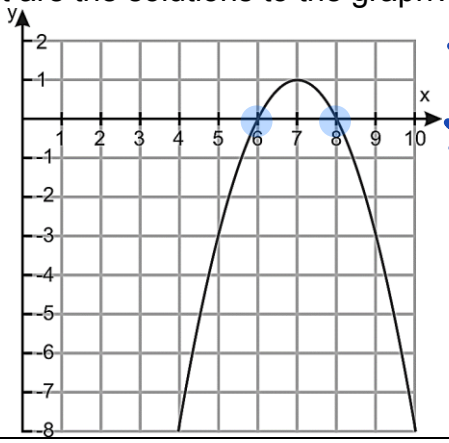
$X = -2$ $X = 6$

17. Are 1 and -6 roots to the quadratic function $f(x) = 2x^2 + 5x - 7$?

1 is a root

-6 is not a root

18. What are the solutions to the graph?



$X = 6$

$X = 8$

19. Error Analysis: Find and circle the error. Then give the correct answer.

1. Solve the equation by completing the square.

$x^2 - 8x + 12 = 0$

$x^2 - 8x = 12$

$x^2 - 8x + 16 = 12$

$(x - 4)^2 = 28$

$x - 4 = \sqrt{28}$

$x = 4 \pm 2\sqrt{7}$

$x^2 - 8x + 12 = 0$ -12 -12

$x^2 - 8x + (-4)^2 = -12 + (-4)^2$

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

$x - 4 = \pm 2$

$+4$ $+4$

$x = 4 \pm 2$

$X = 6$ $X = 2$

Algebra 1 Solving Quadratics Review Continued

Solving by factoring.

1. $x^2 - 9x + 12 = -2$

$x=2$ $x=7$

2. $x^2 + 5x + 6 = 2$

$x=-4$ $x=-1$

3. $2x^2 + 7x - 15 = 0$

$x=\frac{3}{2}$ $x=-5$

4. $3x^2 - x - 10 = 0$

$x=-\frac{5}{3}$ $x=2$

5. $r^2 - 4 = 0$

$r=2$ $r=-2$

6. $x^2 - 36 = 0$

$x=6$ $x=-6$

7. $3x^2 - 9x = 0$

$x=0$ $x=3$

8. $n^2 + n = 0$

$n=0$ $n=-1$

Solving by taking the square.

9. $3x^2 - 1 = 29$

$x=\pm\sqrt{10}$

10. $4x^2 + 5 = 21$

$x=\pm 2$

11. $\frac{1}{2}(x-6)^2-8=0$

$x=10$ $x=2$

12. $3(x+1)^2=27$

$x=2$ $x=-4$

Solve by completing the square.

13. $x^2+18x+37=0$

$x=-9\pm2\sqrt{11}$

14. $v^2-4v-77=0$

$v=11$ $v=-7$

15. $n^2+20n+99=0$

$n=-9$ $n=-11$

16. $n^2-4n+2=0$

$n=2\pm\sqrt{2}$

Solve using the quadratic formula.

17. $2k^2+8k+6=0$

$x=-1$ $x=-3$

18. $3m^2+m-7=0$

$x=\frac{-1\pm\sqrt{85}}{6}$