GRAPHING

Standard Form

1. **Graph the function:** $y=x^{2}-8x-20$

 **Vertex: \_\_\_\_\_\_\_ Axis of Symmetry: \_\_\_\_\_\_\_\_**

**y-intercept: \_\_\_\_\_\_\_ Min/Max Value: \_\_\_\_\_\_\_**

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1. **Graph the function:** $y=\left(x+3\right)^{2}+5$

 **Vertex: \_\_\_\_\_\_\_ Axis of Symmetry: \_\_\_\_\_\_\_\_**

**y-intercept: \_\_\_\_\_\_\_ Min/Max Value: \_\_\_\_\_\_\_**

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1. **Graph the function:** $y=(x-4)(x+2)$

 **Vertex: \_\_\_\_\_\_\_ Axis of Symmetry: \_\_\_\_\_\_\_\_**

**y-intercept: \_\_\_\_\_\_\_ Min/Max Value: \_\_\_\_\_\_\_**

1. **Graph the function:** $y=-x^{2}-2x-6$

 **Vertex: \_\_\_\_\_\_\_ Axis of Symmetry: \_\_\_\_\_\_\_\_**

**y-intercept: \_\_\_\_\_\_\_ Min/Max Value: \_\_\_\_\_\_\_**

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1. **Graph the function:** $y=-2\left(x+5\right)^{2}-3$

 **Vertex: \_\_\_\_\_\_\_ Axis of Symmetry: \_\_\_\_\_\_\_\_**

**y-intercept: \_\_\_\_\_\_\_ Min/Max Value: \_\_\_\_\_\_\_**

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1. **Graph the function:** $y=-2(x+3)(x-1)$

 **Vertex: \_\_\_\_\_\_\_ Axis of Symmetry: \_\_\_\_\_\_\_\_**

**y-intercept: \_\_\_\_\_\_\_ Min/Max Value: \_\_\_\_\_\_\_**

# FACTORING

1. $x^{2}-144$ 9. $4x^{4}-14x^{3`}+20x$

10. $x^{2}-11x+30$ 11. $6x^{2}+23x+20$ 12. $2x^{2}+7x-15$

## SOLVE EQUATIONS BY FACTORING

13. $x^{2}-3x-40=0$ 14. $x^{2}-13x+42=0$ 15. $2x^{2}-13x-7=0$

16. $10x^{2}+11x-6=0$ 17. $x^{2}-63x=0$ 18. $x^{2}=-5x$

19. $x^{2}-81=0$ 20. $2x^{2}-32=0$ 21. $16=38x-12x^{2}$

**RADICALS**

**Simplify the expression.**

22. $\sqrt{45}$ 23. $\sqrt{48}$ 22. $\sqrt{2} ∙\sqrt{14} $ 23. $4\sqrt{2} ∙\sqrt{10}$

24. $\frac{2}{\sqrt{7}}$ 25. $\frac{2}{3+\sqrt{3}}$ 26. $\frac{3}{\sqrt{12}}$

**Solve the equation by using square roots.**

24. $x^{2}=36$ 25. $3 x^{2}=108$ 26. . $5x^{2}+4=14$

25. $(x+5)^{2}=24$ 26. $3(x+1)^{2}=81$ 27. $(x+2)^{2}-12=36$

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28. A city wants to double the area of a rectangular playground that is 72 feet by 48 feet by of adding the same distance x to the length and the width. Write and solve an equation to find the value of x.

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VOCABULARY!!!!!!

29. $\left|2x+6\right|\geq -2$

30. $\sum\_{i=1}^{10}2i-1$0.

Know what the equations are and what the letters do:$ y=ax^{2}+bx+c$, $y=a(x-h)^{2}+k$, $y=a(x-p)(x-q)$