**Sketching** Quadratics

Today, we will be practicing sketching quadratics, specifically using the two details that vertex form provides (vertex and direction) or the two details that factored form provides (zeros/x-intercepts and direction) to sketch the basic shapes of the graph. The *A* value of the quadratic (the number in front), will also give you some information. The bigger that *A* is, the skinnier the graph will be, while the smaller that *A* gets, the fatter the graph will be.

**Sketch the quadratics using vertex form.**

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| 1. $f\left(x\right)=2\left(x+3\right)^{2}-4$Vertex: Direction (circle one): Up or Down | 2. $g\left(x\right)=–\left(x-1\right)^{2}+5$Vertex: Direction (circle one): Up or Down | 3. $h\left(x\right)=-5\left(x-2\right)^{2}+2$Vertex: Direction (circle one): Up or Down |
| 4. $k\left(x\right)=4\left(x-2\right)^{2}+6$Vertex: Direction (circle one): Up or Down | 5. $m\left(x\right)=\left(x+4\right)^{2}-5$Vertex: Direction (circle one): Up or Down | 6. $n\left(x\right)=-3\left(x\right)^{2}+4$Vertex: Direction (circle one): Up or Down |
| 7. $p\left(x\right)=5\left(x+7\right)^{2}$Vertex: Direction (circle one): Up or Down | 8. $r\left(x\right)=4\left(x+5\right)^{2}+5$Vertex: Direction (circle one): Up or Down | 9. $t\left(x\right)=-2\left(x+3\right)^{2}-4$Vertex: Direction (circle one): Up or Down |

**Sketch the quadratics using factored form.**

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| 10. $f\left(x\right)=2(x+3)(x-4)$Zeros/x-int:Direction (circle one): Up or Down | 11. $g\left(x\right)=-(x-1)(x+5)$Zeros/x-int:Direction (circle one): Up or Down | 12. $h\left(x\right)=-5(x+2)(x+2)$Zeros/x-int:Direction (circle one): Up or Down |
| 13. $k\left(x\right)=4(x-2)(x+6)$Zeros/x-int:Direction (circle one): Up or Down | 14. $m\left(x\right)=(x+4)(x-5)$Zeros/x-int:Direction (circle one): Up or Down | 15. $n\left(x\right)=-3x(x+4)$Zeros/x-int:Direction (circle one): Up or Down |
| 16. $p\left(x\right)=5x\left(x+7\right)^{2}$Zeros/x-int:Direction (circle one): Up or Down | 17. $r\left(x\right)=4(x+5)(x+5)$Zeros/x-int:Direction (circle one): Up or Down | 18. $-2(x+3)(x-4)$Zeros/x-int:Direction (circle one): Up or Down |