1. $-\frac{1}{2}(x+6)^2+5$

V. compress by 1/2 ; up 5 ; left 6 ; reflect over x-axis

2. $5(x-7)^2-2$

right 7 ; down 2 ; V. stretch by 5

3. $f(x)=(x-2)^2-1$

h k

Vertex: $(h,k) \rightarrow \boxed{(2,-1)}$

x-int.: $(x,0)$ → solve for x ; y is zero

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

$1=(x-2)^2$

$\pm\sqrt{1}=x-2$

$2\pm1=x$

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

$3=x$ $\quad 1=x$

x-int: $(3,0)$ and $(1,0)$

4. $f(x)=(x+1)^2-2$

h k

$\boxed{\text{Vertex} = (h,k) \rightarrow (-1,-2)}$

x-int: $0=(x+1)^2-2$

$2=(x+1)^2$

$\pm\sqrt{2}=x+1$

$-1\pm\sqrt{2}=x$

$\boxed{x=-1+\sqrt{2} \text{ or } x=-1-\sqrt{2} \text{ OR } x=.414 \text{ & } x=-2.414}$

5. $f(x)=-4x^2+24x-10$

a b c

Vertex form: $y=a(x-h)^2+k$

Vertex $=(h,k)$

$h=\frac{-b}{2a}$ $\quad k=f(h)$

$h=\frac{-24}{2(-4)}=\frac{-24}{-8}=3$

$f(3)=k=-4(3)^2+24(3)-10=26$

$\boxed{V:(3,26) \; ; \; f(x)=-4(x-3)^2+26}$

6. $f(x)=x^2+8x+11$

a b c

$h=\frac{-8}{2(1)}=\frac{-8}{2}=-4$

$k=f(-4)=(-4)^2+8(-4)+$

$16-32+11$

$-16+11$

-5

$\boxed{V:(-4,-5) \; ; \; f(x)=(x+4)^2-5}$