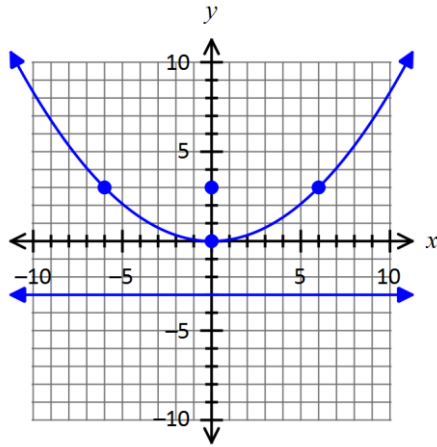
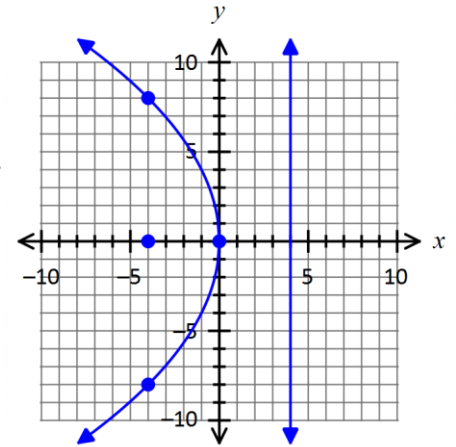


**Precalculus**  
**8.2 Odd Answers**

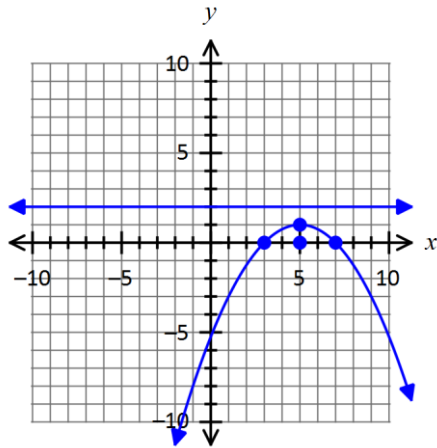
1. Opens up  
 Vertex:  $(0,0)$   
 Focus:  $(0,3)$   
 Directrix:  $y = -3$



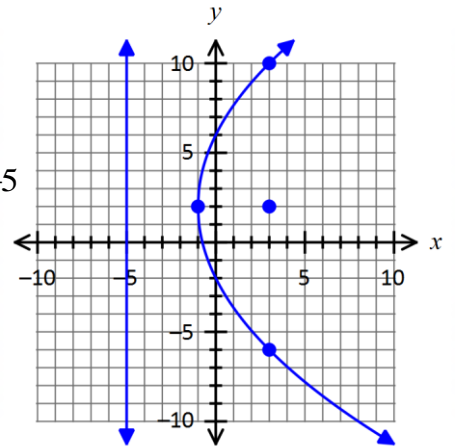
3. Opens left  
 Vertex:  $(0,0)$   
 Focus:  $(-4,0)$   
 Directrix:  $x = 4$



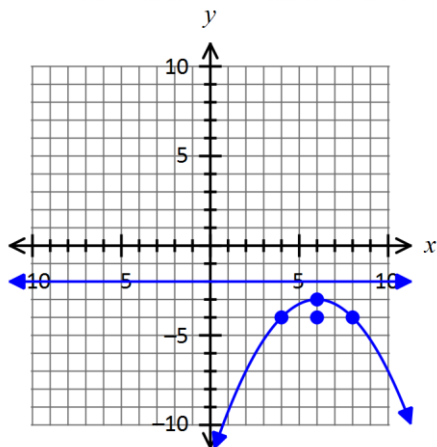
5. Opens down  
 Vertex:  $(5,1)$   
 Focus:  $(5,0)$   
 Directrix:  $y = 2$



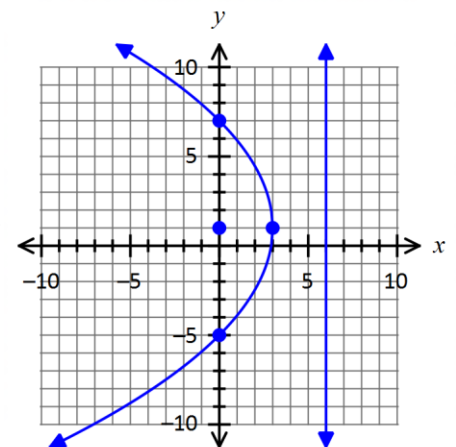
7. Opens right  
 Vertex:  $(-1,2)$   
 Focus:  $(3,2)$   
 Directrix:  $x = -5$



9. Opens down  
 Vertex:  $(6,-3)$   
 Focus:  $(6,-4)$   
 Directrix:  $y = -2$



11. Opens left  
 Vertex:  $(3,1)$   
 Focus:  $(0,1)$   
 Directrix:  $x = 6$



13.  $y^2 = -28x$   
 15.  $(x+5)^2 = 12(y-5)$   
 17.  $(y+1)^2 = 32(x-7)$   
 19.  $y^2 = -18x$   
 21. 1 inch  
 23. 4.5 feet  
 25. 24.3 feet, 18.75 feet, 7.6 feet