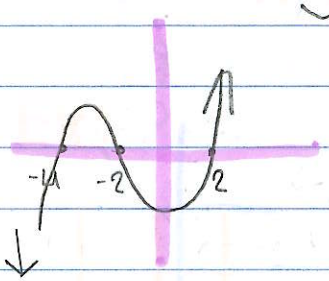
Creating Polynomial Functions from Graphs



Leading coefficient

$P(x)=a(x+4)(x+2)(x-2)$

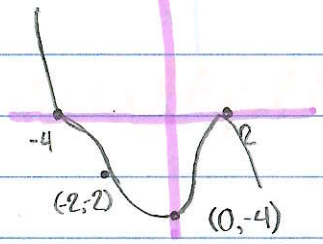
- To find the Leading Coefficient use a test point:
  - the y-intercept
  - any other point on $P(x)$
  - don't use test points on the x-axis

$y=a(x+4)(x+2)(x-2)$

$-20=a(0+4)(0+2)(0-2)$

$\frac{-20}{-16}=\frac{a(-16)}{-16}$ $1.25=a$

$P(x)=1.25(x+4)(x+2)(x-2)$



$P(x)=a(x+4)^3(x-2)^2$

$-4=a(0+4)^3(0-2)^2$

$\frac{-4}{256}=\frac{a(256)}{256}$

$P(x)=-4/256\,(x+4)^3(x-2)^2$

Hilroy