Section 4.5 cont. - Reflections
- Piecewise functions

Reflections ⇒ opposite
mirror version

$-y = f(x)$

$y = -f(x)$

⇓

Reflect across x-axis

(y) Vertical reflection

$y = f(-x)$

⇓

Reflect across y-axis

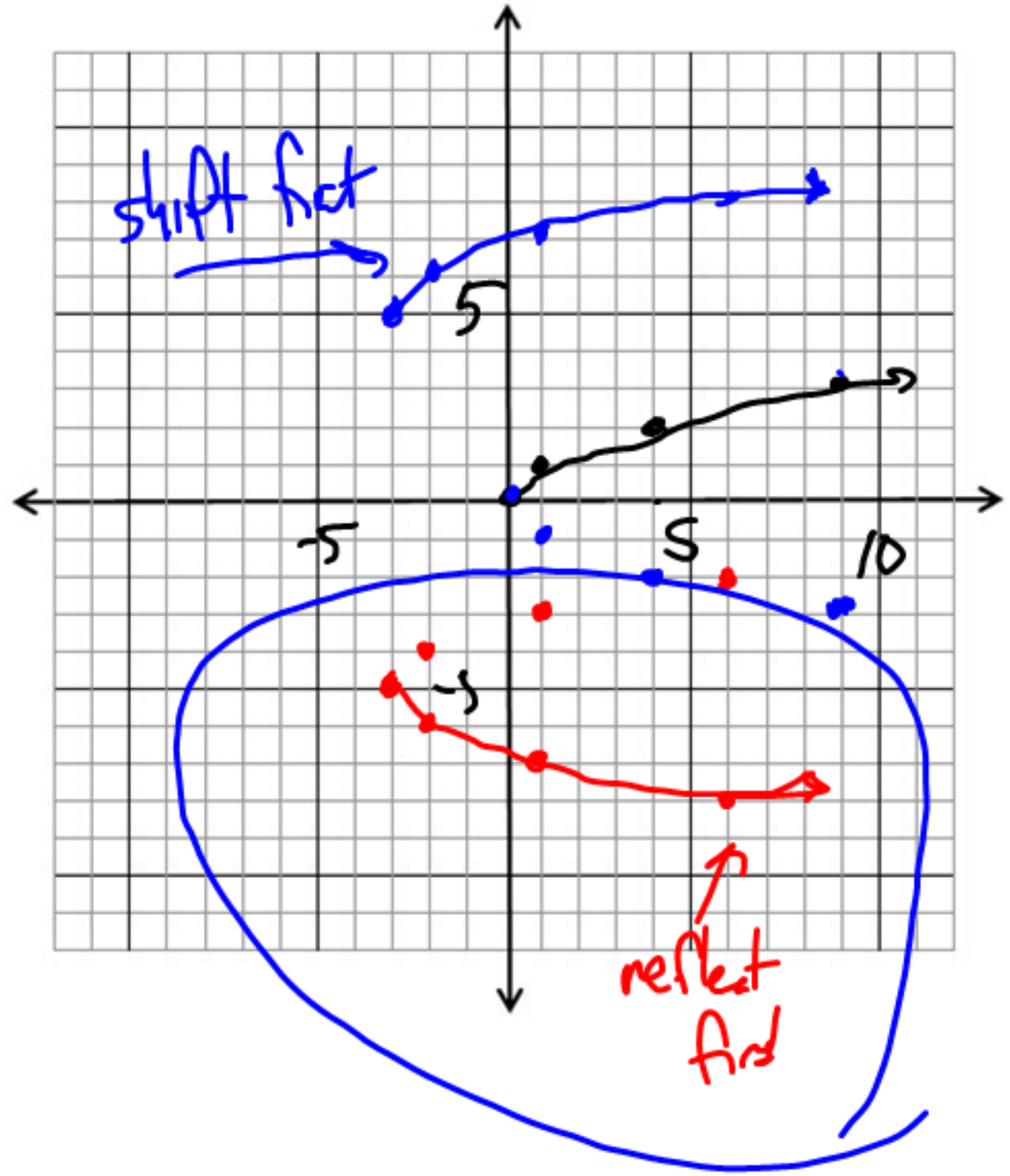
(x) horizontal reflection

Graph $y = -\sqrt{x+3} - 5$

Parent $y = \sqrt{x}$

(1) vert reflection

(2) shift left 3
down 5

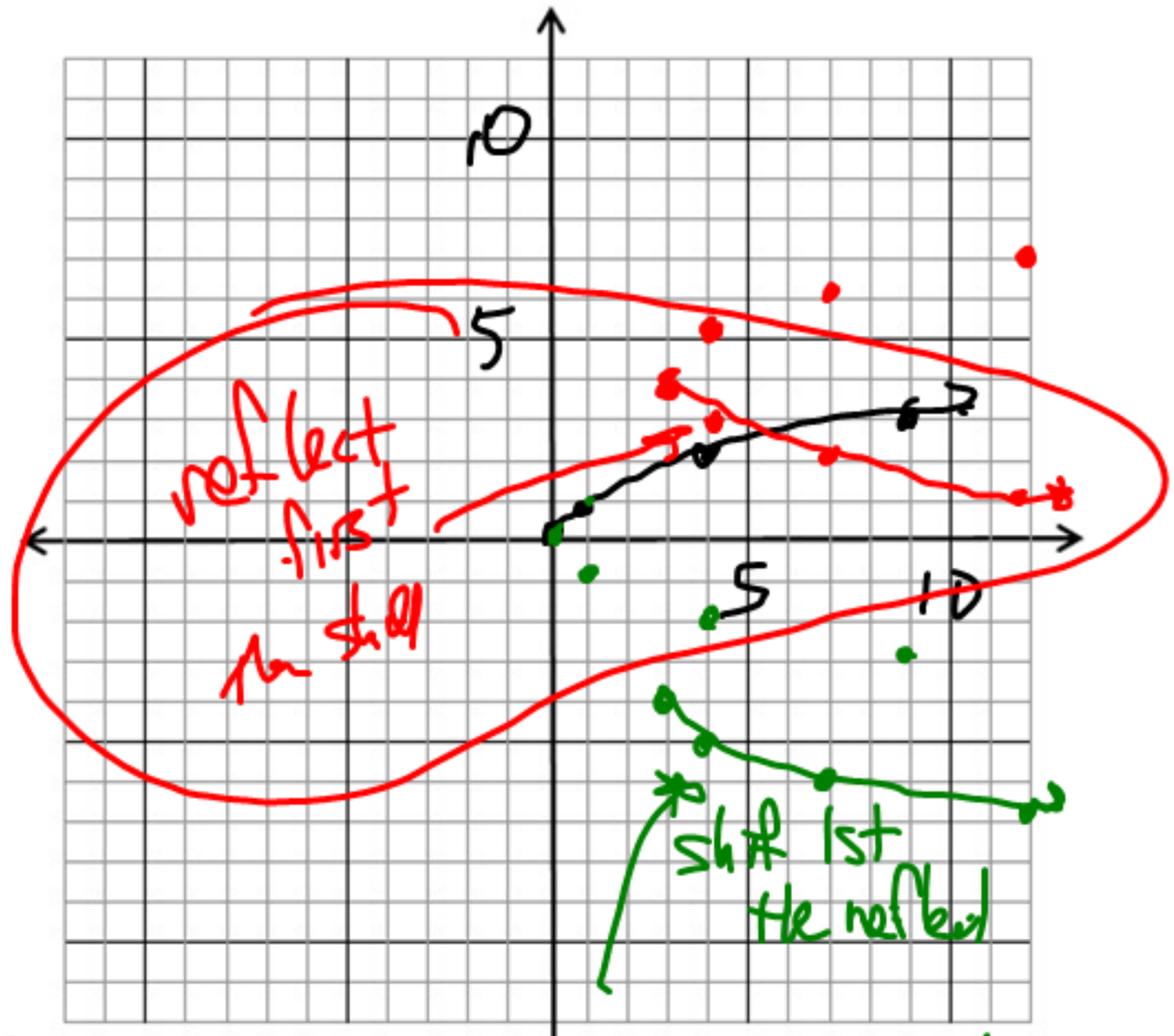


graph $y = -\sqrt{x-3} + 4$

Parent function $y = \sqrt{x}$

vert reflection (x)

translation (shift) up 4, right 3 (+)



PEMDAS

$y = -(\sqrt{x-3} + 4)$

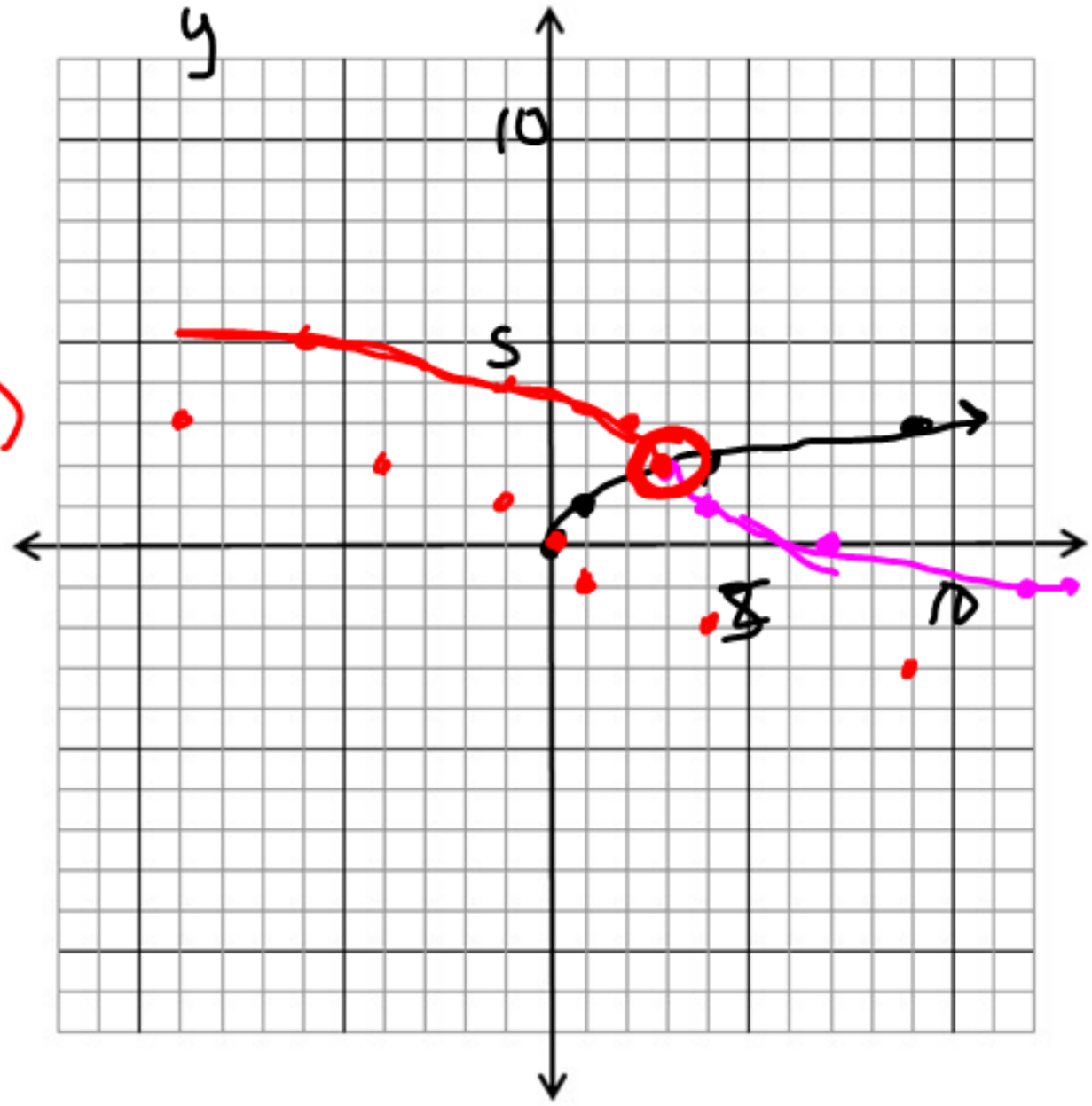
$y = -\sqrt{x-3} + 2$

· Parent $y = \sqrt{x}$

vert reflection (across x-axis)

shift right 3

up 2



$y = \sqrt{-(x-3)} + 2$

hor reflctn

shift right 3, up 2