BECA / Huson / Algebra 2: Polynomials
12 December 2023

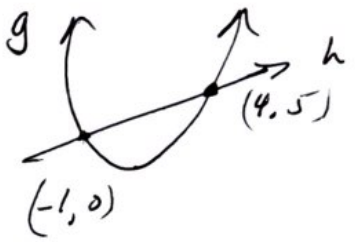
Name: Solutions

2.21 Do Now Quiz: Solving quadratic equations using a calculator (A1-A.REI.4a)

1. For the pair of polynomials given, state as ordered pairs **all** the points of intersection of their graphs.

$g(x) = (x-3)(x+1)$
$h(x) = x+1$

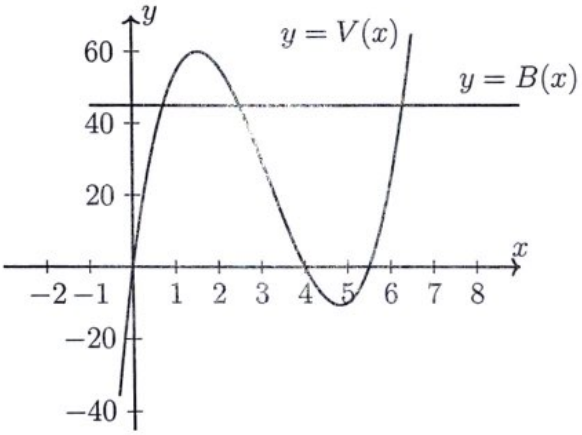
$(-1, 0)$, $(4, 5)$



2. Arlenis is making an open-top box by cutting squares out of the corners of a piece of paper that is 8 inches wide and 11 inches long, and then folding up the sides. If the side lengths of her square cutouts are x inches, then the volume of the box is given by

$V(x) = x(8-2x)(11-2x)$

Arlenis graphs the volume of the box along with the function $B(x) = 45$.



(a) What is a reasonable domain for $V(x)$?

$0 < x < 4$

(b) Approximately which value of x will give her a box with the greatest volume?

$x \approx 2$

(c) For approximately which values of x is the volume of the box increasing?

$0 < x < 2$

(d) What do the points of intersection of these two graphs represent?

when the box has a volume of $45\ in^3$