

- Apply Descartes' rules of signs:  $h(x) = 2x^4 + 7x^3 + 28x^2 + 112x - 64$

PART 1: ONE SIGN CHANGE  $\Rightarrow$  THE NUMBER OF POSITIVE  
REAL ZEROS IS 1.

PART 2:  $2x^4 - 7x^3 + 28x^2 - 112x - 64$

THREE SIGN CHANGES  $\Rightarrow$  THE NUMBER OF NEGATIVE  
REAL ZEROS IS 3 OR 1.

IN FACT,  $h$  HAS ONE POSITIVE REAL ZERO:  $x = 4$

$h$  HAS ONE NEGATIVE REAL ZERO:  $x = -\frac{1}{2}$

$h$  HAS TWO COMPLEX ZEROS:  $x = 4i$ ,  $x = -4i$