#28 to find possible number of positive real zeros check # of sign changes in $f(x)$:

$$f(x) = 25x^9 + 3x^7 - 12x^6 + 8x^4 + 3x^2 - 2x$$

(decreasing powers of $x$ although not necessary)

sign changes : 3 of them

Hence, there are either 3 positive real zeros

or $3 - 2 = 1$ positive real zeros

(2 ↑ even)

to find the possible number of negative real zeros check the # of sign changes of $f(-x)$:

$$f(-x) = 25(-x)^9 + 3(-x)^7 - 12(-x)^6 + 8(-x)^4 + 3(-x)^2 - 2(-x)$$

$$= -25x^9 - 3x^7 - 12x^6 + 8x^4 + 3x^2 + 2x$$

only one sign change.

Hence, there ~~are~~ is only one negative real ~~zeros~~.

#29 the degree of $f(x)$ is 9, hence $f(x)$ has at most $9 - 1 = 8$ turning points

#30 We have a property that says that if $a + bi$ is a root of $f(x)$ then $a - bi$ is a root of $f(x)$. Therefore, since $-2 - 5i$ is a root of a polynomial function, then $-2 + 5i$ must be also a root of that polyn. function.