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$$f(x) = (x-2)^2 (x-3)^2 (2x+5)$$

multiplicities are how many

of the same roots there are.

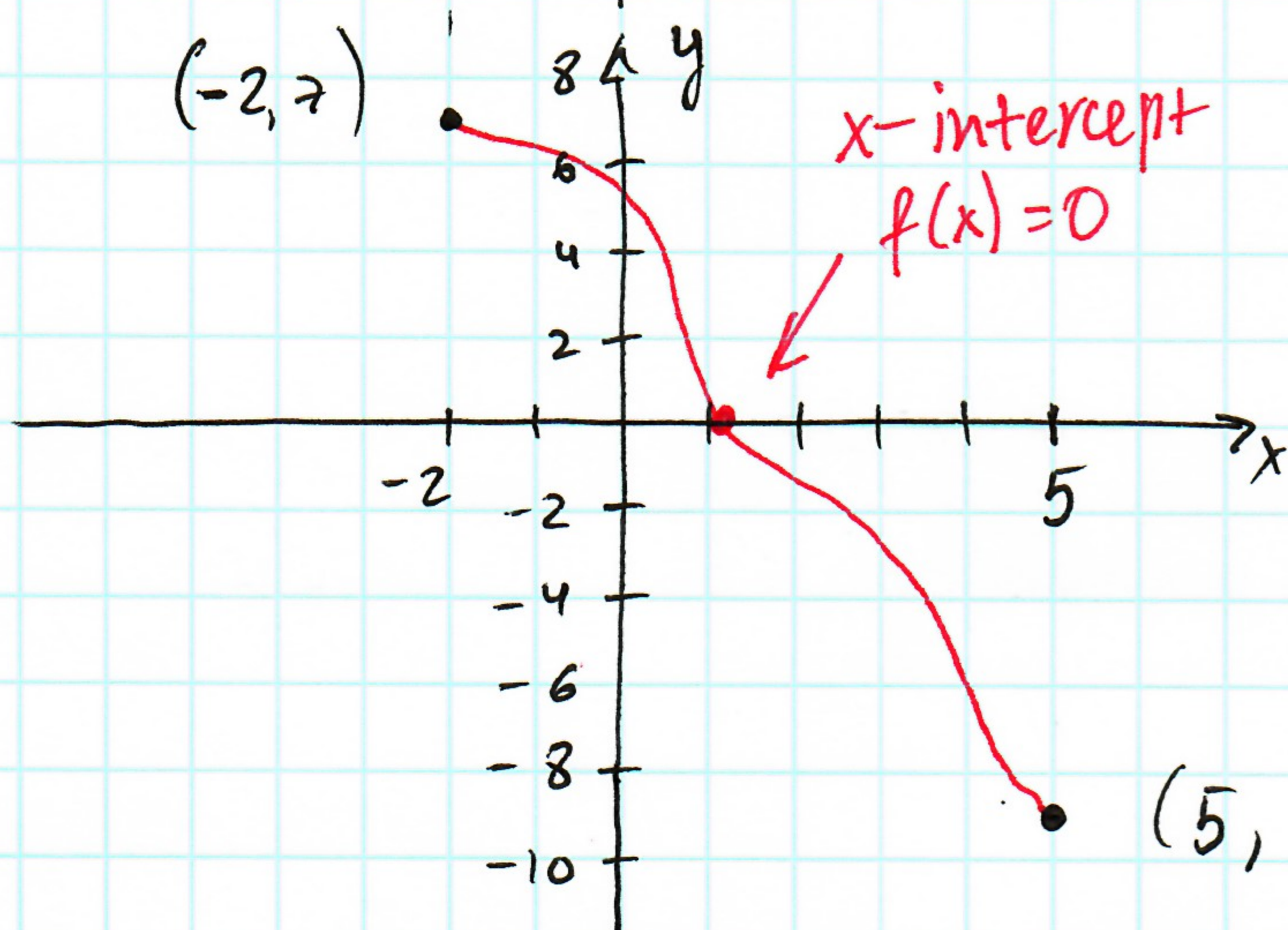
For, example there are two roots 2, two roots 3,...

See the answers for the full answer.

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take a look at the rectangular coord. system

with $f(-2) = 7$ and $f(5) = -9$:



since graphs of polyn. functions are smooth

continuous curves,

the two points are

connected, hence the

curve must cross the x-axis!

This is also what Intermediate Theorem says:

there must be a value c from interval $(-2, 5)$ such that $f(c) = 0$ i.e. $f(x)$ has a zero c .