

Who Am I?

Guess my number from the following clues.

I would display one clue at a time and allow students to make a guess after each problem. Or you could have the students write down all the possibilities after each clue.

1. I am a whole number with $\left(\frac{d}{dx}(x^2 + 3x + 5)\right)\big|_{x=0}$ digits.
2. My tens digit is $\left(\frac{d}{dx}\left(\frac{-80}{\sqrt{x}}\right)\right)\big|_{x=4}$
3. I am divisible by $\left(\frac{d}{dt}\left(\frac{(t^2-3)^4}{4}\right)\right)\big|_{t=2}$
4. I am divisible by $\left(\frac{d}{dx}\left(\frac{-3-7x-6x^2}{2x+3}\right)\right)\big|_{x=-1}$
5. I am less than $\left(\frac{d}{dx}(400 \sin(2x))\right)\big|_{x=0}$
6. I am divisible by $\left(\frac{d}{dx}\left(\frac{28}{1-x}\right)\right)\big|_{x=-1}$
7. My ones digit is $\left(\frac{d}{dx}(x^3)\right)\big|_{x=\sqrt{2}}$
8. My hundreds digit is greater than my ones digit
9. Each of my digits is different
10. My ones digit is greater than my tens digit

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