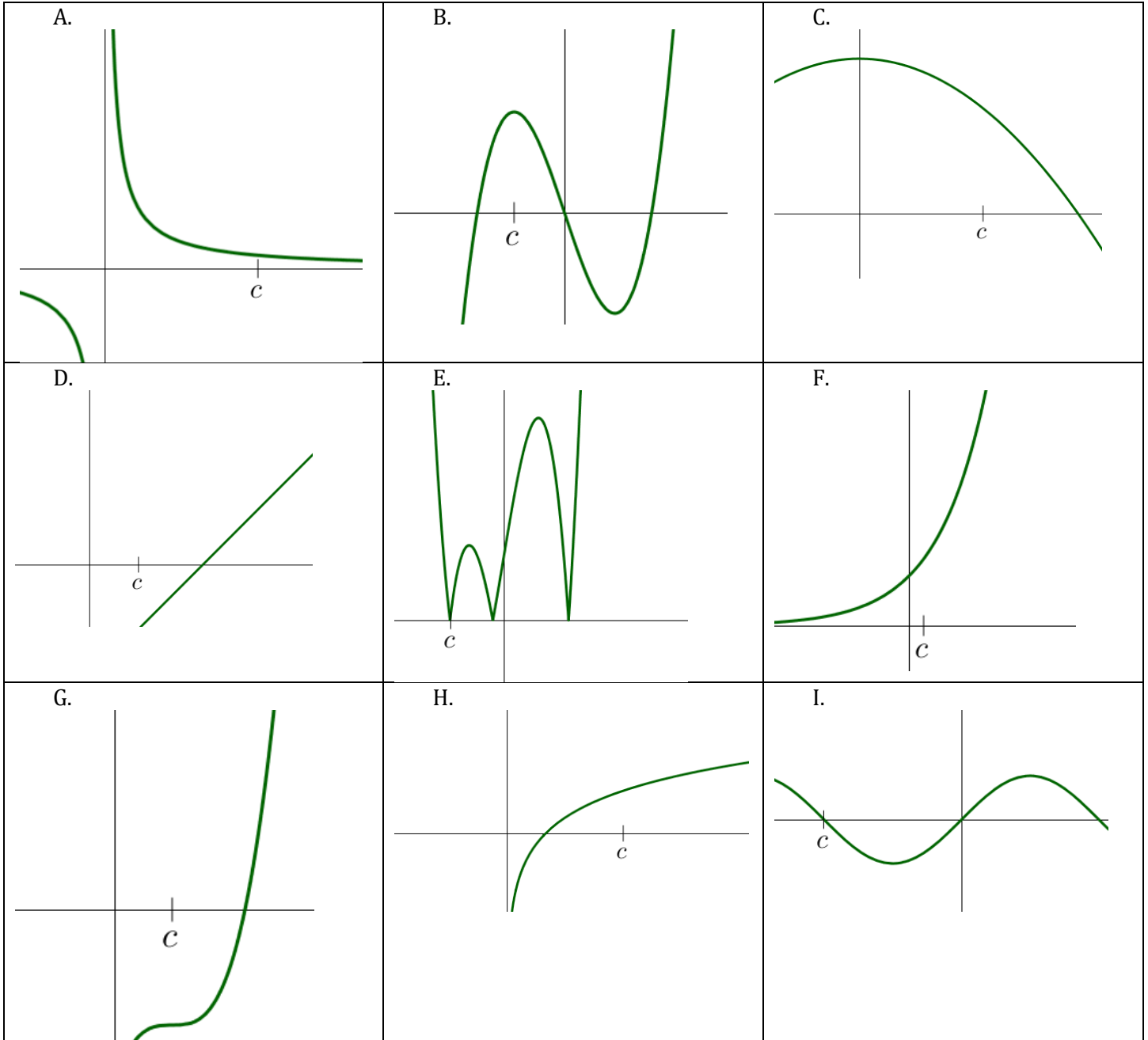


Name:
Teacher:
Period:
Due Date:

		HW 2.2B
Be Good Why>How>What		

FUN-ctions Do Now

For each function, determine if $f(c)$ is positive or negative, if $f'(c)$ is positive or negative and if $f''(c)$ is positive or negative.



Name:
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	HW 2.2B
Be Good Why>How>What	

Two Rules for School

1.) $f(x) = x(3x - 9)^3$	2.) $y = \frac{1}{2}x^2\sqrt{16 - x^2}$
3.) $g(t) = \frac{3x-2}{(2x-4)^2}$	4.) $g(t) = \sqrt{\sqrt{t+1} + 1}$
5.) $y = \cos 4x$	6.) $y = \sin(\pi x)^2$
7.) $y = 5 \tan 3x$	8.) $g(x) = (2 + (x^2 + 1)^4)^3$

Higher-Order Derivatives

<p>9.) Determine the second derivative: $g(x) = \frac{x^2 + 2x - 1}{x}$</p>	<p>10.) Determine the second derivative: $p(x) = \frac{4 - x}{(x + 2)^2}$</p>
<p>11.) Given $f(x) = 8x^6 - 10x^5 + 5x^3$, determine $f^{(5)}(x)$</p>	<p>12.) Given $f''(x) = 2 - \frac{2}{x}$, determine $f^{(4)}(x)$.</p>
<p>13.) Verify that the function $y = 2x^3 - 6x + 10$ satisfies the differential equation: $-y'' - xy'' - 2y' = -24x^2$</p>	<p>14.) Given $f(x) = x^n$, determine $f^{(n)}(x)$</p>
<p>15.) Sketch the graph of a differentiable function f such that $f(2) = 4$, $f' < 0$ for $-\infty < x < 2$ and $f' > 0$ for $2 < x < \infty$.</p>	<p>16.) The graphs of f, f' and f'' are shown on the same set of coordinate axes. Identify each graph.</p>