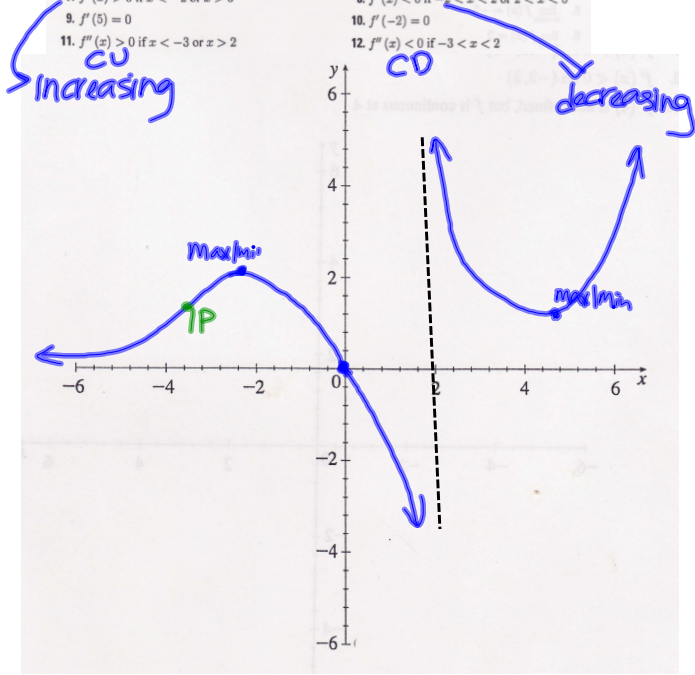


Group Work 3, Section 4.6
Putting it All Together (Version 1)

Sketch the graph of a function $f(x)$ which has all of the following properties:

1. $\lim_{x \rightarrow -2^-} f(x) = -\infty$
2. $\lim_{x \rightarrow 2^+} f(x) = \infty$
3. $\lim_{x \rightarrow -\infty} f(x) = 0$
4. $f(-2) = 2$
5. $f(5) = 1$
6. $f(0) = 0$
7. $f'(x) > 0$ if $x < -2$ or $x > 5$
8. $f'(x) < 0$ if $-2 < x < 2$ or $2 < x < 5$
9. $f''(5) = 0$
10. $f'(-2) = 0$
11. $f''(x) > 0$ if $x < -3$ or $x > 2$
12. $f''(x) < 0$ if $-3 < x < 2$

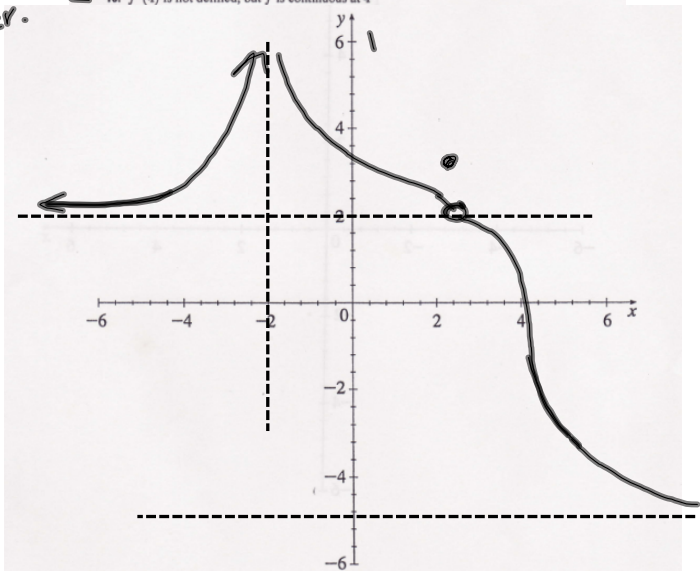


Group Work 4, Section 4.6
Putting it All Together (Version 2)

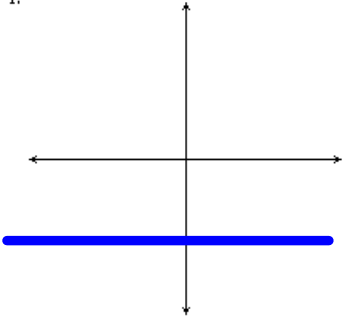
Sketch the graph of a function $f(x)$ which has all of the following properties:

1. f has domain $(-\infty, -2) \cup (-2, \infty)$
2. f has range $(-5, \infty)$
3. The graph of f has a vertical asymptote at $x = -2$
4. $\lim_{x \rightarrow -\infty} f(x) = 2$
5. $\lim_{x \rightarrow -\infty} f(x) = -5$
6. $\lim_{x \rightarrow 3} f(x) = 2$
7. f is discontinuous at $x = 3$
8. $f'(x) > 0$ on $(-\infty, -2)$
9. $f'(x) < 0$ on $(-2, 3)$
10. $f'(4)$ is not defined, but f is continuous at 4

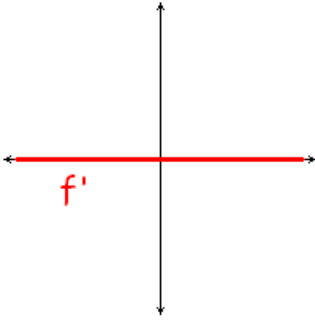
Increases ←
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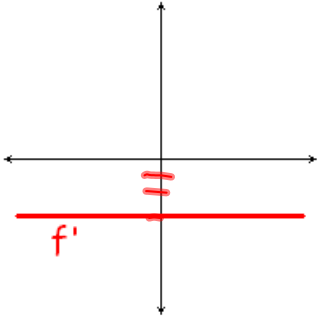
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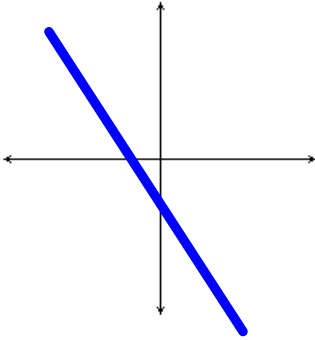
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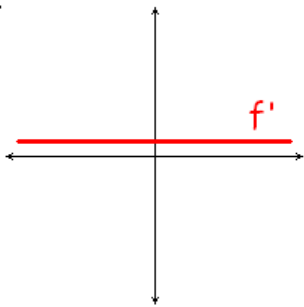
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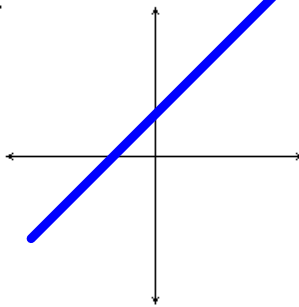
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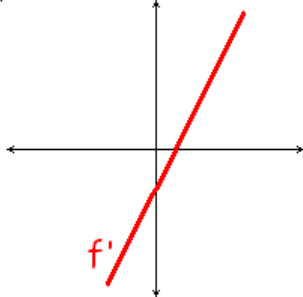
3.



3.



4.



4.

