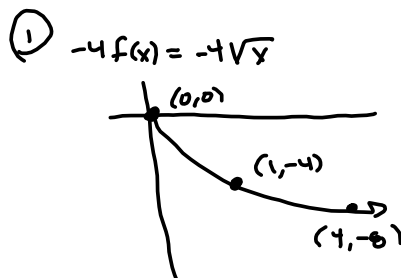
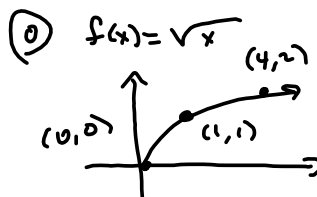


1340

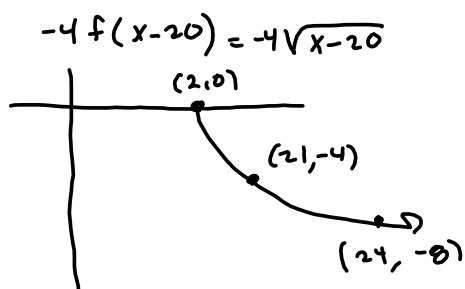
Week 6 Extra

Mills

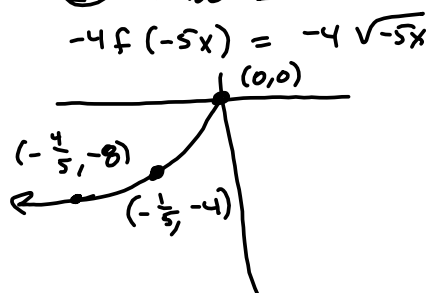
① (10pts) we graph $g(x) = -4\sqrt{-5x-20} + 64$, step-by-step



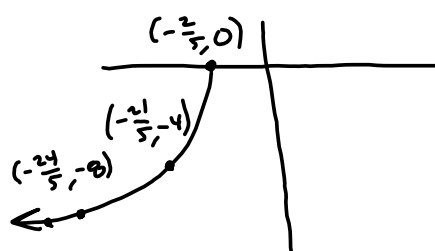
② Method 1



② Method 2

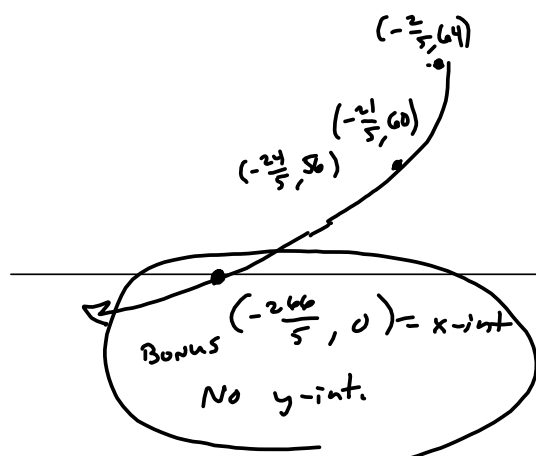


③ $-4f(-5x-20) = -4\sqrt{-5x-20} = -4\sqrt{-5(x+4)} = -4f(-5(x+4))$



$m_1:$
 $x \mapsto -\frac{1}{5}x$
 $m_2:$
 $x \mapsto x-4$
 $-\frac{1}{5} - 4 = \frac{-1-20}{5} = -\frac{21}{5}$
 $-\frac{4}{5} - \frac{20}{5} = -\frac{24}{5}$

④ $g(x) = -4\sqrt{-5x-20} + 64$



#2 Bonus (5pts)

$g(x) = 0$
 $-4\sqrt{-5x-20} + 64 = 0$
 $-4\sqrt{-5x-20} = -64$
 $\sqrt{-5x-20} = 16$
 $-5x-20 = 256$
 $-5x = 276$
 $x = -\frac{276}{5}$

1340

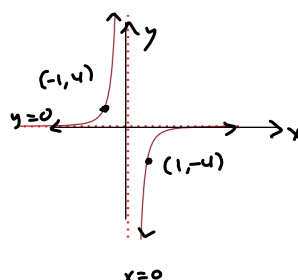
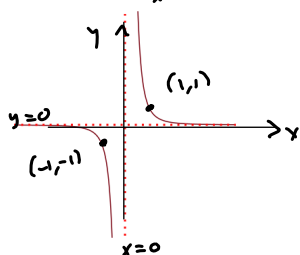
Week 6 Extra

Mills

③ 10pts $g(x) = \frac{-4}{(-5x-20)^3} + 64$

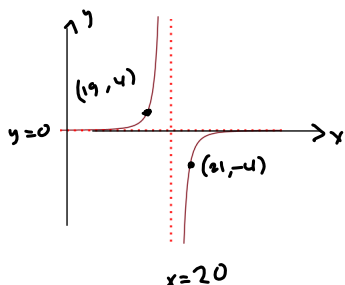
② $f(x) = \frac{1}{x^3}$

① $-4f(x) = \frac{-4}{x^3}$



2 METHOD 1

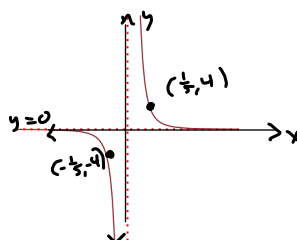
$$-4f(x-20) = \frac{-4}{(x-20)^3}$$



2 METHOD 2

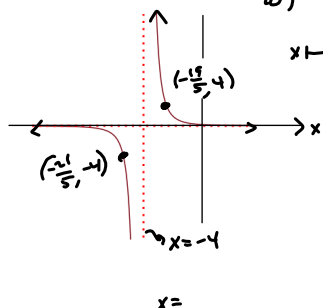
$$-4f(-5x) = \frac{-4}{(-5x)^3}$$

$$x \mapsto -\frac{1}{5}x$$



③ $-4f(-5x-20) = \frac{-4}{(-5x-20)^3} = \frac{-4}{(-5(x+4))^3} = -4f(-5(x+4))$

$$x \mapsto -\frac{1}{5}x$$



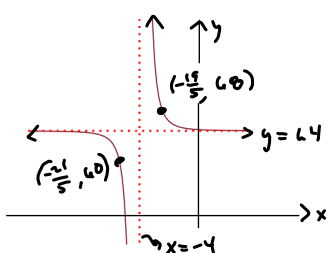
$$x \mapsto x-4$$

$$-\frac{1}{5}-4 = -\frac{1-20}{5} = -\frac{19}{5}$$

$$\frac{1}{5}-\frac{20}{5} = -\frac{19}{5}$$

Same graph for both methods, just arrived at, differently

④ $g(x) = \frac{-4}{(-5x-20)^3} + 64$



In general 2pts per sketch method 1 or method 2 are fine.

$\frac{1}{2}$ -credit (5pts) if they get the last graph and show the endpoint. Try to give credit for correct moves. This makes it tough to grade if they make early mistakes, but do other moves correctly.