

6.3 Review

Ex: $\int_{1.2}^{5.7} \left(x^3 + \frac{3}{4}x^{1/2} - \frac{2}{3}x^{4.6} \right) dx$

Step 1 add \Rightarrow divide

$$\frac{x^4}{4} + \frac{3}{4} \cdot \frac{2}{3} x^{3/2} - \frac{2}{3} \frac{x^{5.6}}{5.6} \quad \left| \begin{array}{l} 5.7 = x \\ 1.2 = x \end{array} \right.$$

Step 2 Clean-up!!

$$\frac{x^4}{4} = 0.25x^4 \quad ; \quad \frac{3}{4} \cdot \frac{2}{3} x^{3/2} = 0.5x^{3/2} \quad ;$$

$$\frac{2}{3} \frac{x^{5.6}}{5.6} = 0.119x^{5.6}$$

$$= 0.25x^4 + 0.5x^{3/2} - 0.119x^{5.6} \quad \left| \begin{array}{l} x = 5.7 \\ x = 1.2 \end{array} \right.$$

Step 3 Subtract

(Subtract)

$$x=5.7 \quad (0.25(5.7)^4 + 0.5(5.7)^{3/2} - 0.119(5.7)^{5.6}) \quad \underline{\underline{1^{st} PC}}$$

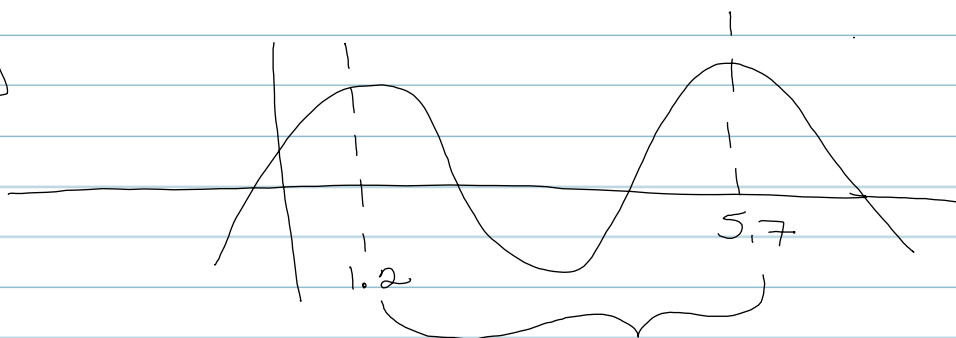
$$x=1.2 \quad (0.25(1.2)^4 + 0.5(1.2)^{3/2} - 0.119(1.2)^{5.6}) \quad \underline{\underline{2^{nd} PC}}$$

$$\text{so: } (0.25(5.7)^4 + 0.5(5.7)^{3/2} - 0.119(5.7)^{5.6}) - (0.25(1.2)^4 + 0.5(1.2)^{3/2} - 0.119(1.2)^{5.6})$$

$$= -1763.742 \quad - 0.8453$$

$$= -1764.587$$

Step 4



Tells us that between these points we are below x-axis @ total area of -1764.587 .

How to check on calculator

① * Put original function into y_1 spot in calculator.

,SD $x^3 + \frac{3}{4}x^{1/2} - \frac{2}{3}x^{4.6}$

y_1

② Go to 2nd Trace (to go to Calc) and # 7.

③ If you cannot see graph, or it says FAILED / ERROR check settings in window. Make sure they are close to your limits

5.7 upper limit
1.2 lower limit
* always go a little above & a little below in window min/max

④ Calculator will shade in the area

⑤ Should confirm your answer is correct