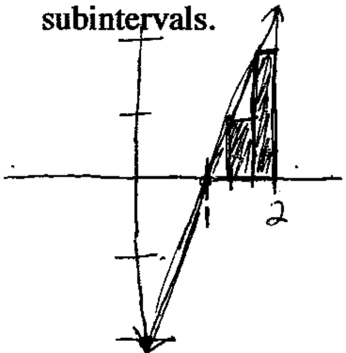
Solve:

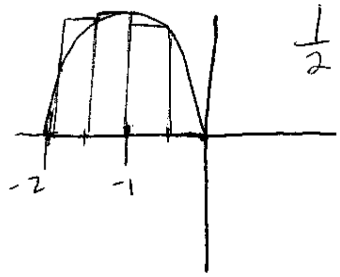
1) Calculate the left Riemann Sum for $q(x) = 2x - 2$ on the interval [1,2] divided into 3 subintervals.



$\frac{1}{3}\left(0+\frac{2}{3}+\frac{4}{3}\right)$

$= \frac{1}{3}\cdot 2 = \boxed{\frac{2}{3}}$

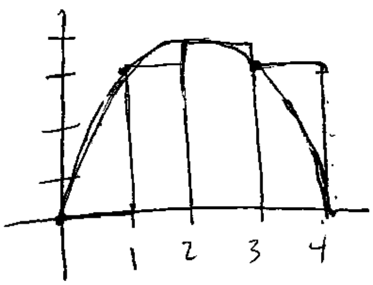
2) Calculate the right Riemann Sum for $d(x) = x^3 - 4x$ on the interval [-2,0] divided into 4 subintervals.



$\frac{1}{2}(2.625+3+1.875+0)$

$= \boxed{3.75}$

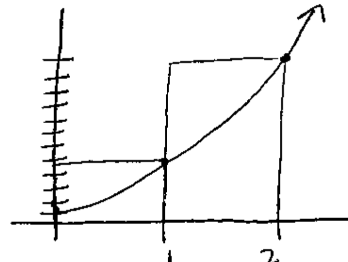
3) Approximate the area under $r(x) = -x^2 + 4x$ on the interval [0,4] by finding the left Riemann Sum for r(x) using 4 subintervals.



$1(0+3+4+3)$

$= \boxed{10}$

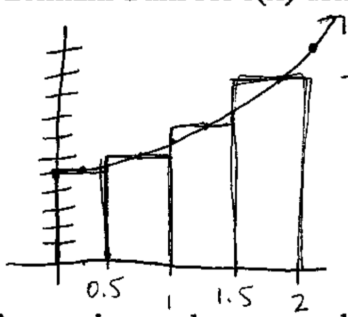
4) Approximate the area under $v(x) = 4x^2 + 3x + 2$ on the interval [0,2] by finding the right Riemann Sum for v(x) using 2 subintervals.



$1(9+24)$

$= \boxed{33}$

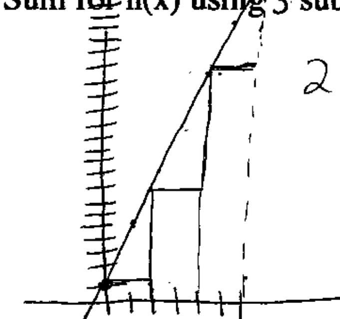
5) Approximate the area under $r(x) = x^2 + x + 5$ on the interval [0,2] by finding the middle Riemann Sum for r(x) using 4 subintervals.



$\frac{1}{2}(5.3125+6.3125+7.8125+9.8125)$

$= \boxed{14.625}$

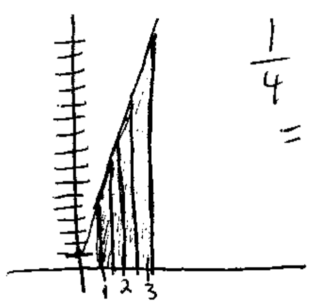
6) Approximate the area under $h(x) = 4x + 1$ on the interval [0,6] by finding the left Riemann Sum for h(x) using 3 subintervals.



$2(1+9+17)$

$= \boxed{54}$

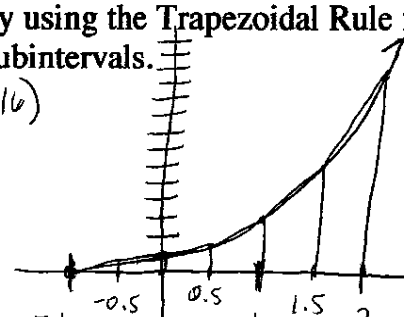
7) Approximate the area under $w(x) = 5x + 1$ on the interval [1,3] by using the Trapezoidal Rule for w(x) using 4 subintervals.



$\frac{1}{4}(6+2\cdot 8.5+2\cdot 11+2\cdot 13.5+16)$

$= \boxed{22}$

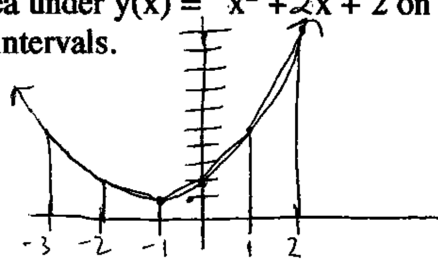
8) Approximate the area under $a(x) = 2x^3 + 2x^2 + x + 1$ on the interval [-1,2] by using the Trapezoidal Rule for a(x) using 6 subintervals.



$\frac{1}{4}(0+2\cdot .75+2\cdot 1+2\cdot 2.25+2\cdot 6+2\cdot 13.75+27)$

$= \boxed{18.625}$

9) Approximate the area under $y(x) = x^2 + 2x + 2$ on the interval [-3,2] by using the Trapezoidal Rule for y(x) using 5 subintervals.



$\frac{1}{2}(5+2\cdot 2+2\cdot 1+2\cdot 2+2\cdot 5+10)$

$= \boxed{17.5}$