A.P. Calculus - Review #34

For each problem, write the 'limit-sum' that you would use to find the area under each curve for the given interval.

1) $f(x) = 2x + 4;\ [0, 5]$

2) $f(x) = x^2 + 6;\ [0, 1]$

3) $f(x) = 3x + 6;\ [0, 2]$

4) $f(x) = x^2 + 1;\ [2, 3]$

5) $f(x) = 3x + 3;\ [0, 3]$

6) $f(x) = x + 5;\ [0, 1]$

7) $f(x) = x + 4;\ [2, 5]$

8) $f(x) = 2x + 4;\ [1, 3]$

9) $f(x) = 2x + 3;\ [3, 5]$

10) $f(x) = 2x + 6;\ [0, 3]$

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For each problem, write the 'limit-sum' that you would use to find the area under each curve for the given interval.

1) $f(x) = 2x + 4;\ [0, 5]$

$$\lim_{n\to\infty} \sum_{i=1}^{n} \left[2\left(0 + \frac{5-0}{n}i\right) + 4\right]\left[\frac{5-0}{n}\right]$$

2) $f(x) = x^2 + 6;\ [0, 1]$

$$\lim_{n\to\infty} \sum_{i=1}^{n} \left[\left(0 + \frac{1-0}{n}i\right)^2 + 6\right]\left[\frac{1-0}{n}\right]$$

3) $f(x) = 3x + 6;\ [0, 2]$

$$\lim_{n\to\infty} \sum_{i=1}^{n} \left[3\left(0 + \frac{2-0}{n}i\right) + 6\right]\left[\frac{2-0}{n}\right]$$

4) $f(x) = x^2 + 1;\ [2, 3]$

$$\lim_{n\to\infty} \sum_{i=1}^{n} \left[\left(2 + \frac{3-2}{n}i\right)^2 + 1\right]\left[\frac{3-2}{n}\right]$$

5) $f(x) = 3x + 3;\ [0, 3]$

$$\lim_{n\to\infty} \sum_{i=1}^{n} \left[3\left(0 + \frac{3-0}{n}i\right) + 3\right]\left[\frac{3-0}{n}\right]$$

6) $f(x) = x + 5;\ [0, 1]$

$$\lim_{n\to 0} \sum_{i=1}^{n} \left[\left(0 + \frac{1-0}{n}i\right) + 5\right]\left[\frac{1-0}{n}\right]$$

7) $f(x) = x + 4;\ [2, 5]$

$$\lim_{n\to 0} \sum_{i=1}^{n} \left[\left(2 + \frac{5-2}{n}i\right) + 4\right]\left[\frac{5-2}{n}\right]$$

8) $f(x) = 2x + 4;\ [1, 3]$

$$\lim_{n\to 0} \sum_{i=1}^{n} \left[2\left(1 + \frac{3-1}{n}i\right) + 4\right]\left[\frac{3-1}{n}\right]$$

9) $f(x) = 2x + 3;\ [3, 5]$

$$\lim_{n\to 0} \sum_{i=1}^{n} \left[2\left(3 + \frac{5-3}{n}i\right) + 3\right]\left[\frac{5-3}{n}\right]$$

10) $f(x) = 2x + 6;\ [0, 3]$

$$\lim_{n\to 0} \sum_{i=1}^{n} \left[2\left(0 + \frac{3-0}{n}i\right) + 6\right]\left[\frac{3-0}{n}\right]$$