$\qquad$

1. Use the data below to approximate the area under the curve using Left Riemann Sums. and 4 sub-intervals.

| T | 0 | 2 | 5 | 7 | 11 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathrm{P}(\mathrm{t})$ | 5.7 | 4 | 2 | 1.2 | .6 |

2. Use a Right Riemann sum with 4 subintervals indicated by the data in the table to approximate $\int_{0}^{12} f(x) d x$. Show the work that leads to your answer.

| T | 0 | 3 | 6 | 9 | 12 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathrm{~W}(\mathrm{t})$ | 20 | 31 | 28 | 24 | 22 |

3. Use the data below to approximate the area under the curve using the Trapezoid Rule with 4 sub-intervals.

| $T$ | 0 | 30 | 40 | 50 | 70 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $R(t)$ | 20 | 30 | 40 | 55 | 65 |

4. Use the data below to approximate the area under the curve using a Midpoint Riemann Sums with 2 sub-intervals

| t | 0 | 4 | 8 | 12 | 16 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathrm{~V}(\mathrm{t})$ | 7 | 9.2 | 9.5 | 7 | 4.5 |

