

Math Sheet

Name _____ Score _____ Teacher _____ Date _____

Accumulation, Average Value, and Net Change

Use a definite integral to interpret signed change, average value, or recovery from an initial value. Label estimated table results.

1. table t : 0, 2; $r(t)$: 4, 12, for $0 \leq t \leq 2$, with t in seconds and $r(t)$ in meters per seconds. Use a trapezoid estimate. Find signed net change.

2. $r(t)=2t-1$, for $0 \leq t \leq 2$, with t in seconds and $r(t)$ in meters per seconds. Find the average value of the rate.

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3. $r(t)=3t-3$, for $0 \leq t \leq 4$, with t in seconds and $r(t)$ in meters per seconds. Find signed net change.

4. $r(t)=2t+3$, for $0 \leq t \leq 3$, with t in seconds and $r(t)$ in meters per seconds. If $Q(0)=11$ meters, find $Q(3)$.

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5. table t : 0, 2; $r(t)$: 2, 6, for $0 \leq t \leq 2$, with t in seconds and $r(t)$ in meters per seconds. Use a trapezoid estimate. If $Q(0)=17$ meters, find $Q(2)$.

6. table t : 0, 3; $r(t)$: -2, 10, for $0 \leq t \leq 3$, with t in seconds and $r(t)$ in meters per seconds. Use a trapezoid estimate. Find the average value of the rate.
