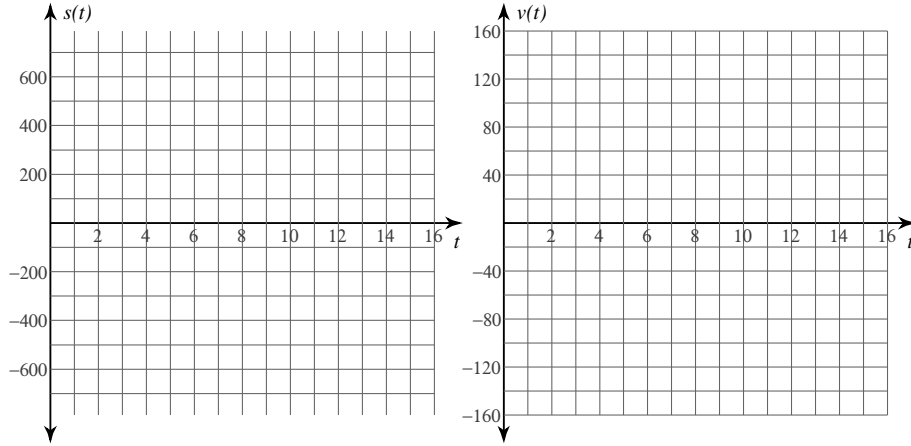


### Motion Along a Line Revisited

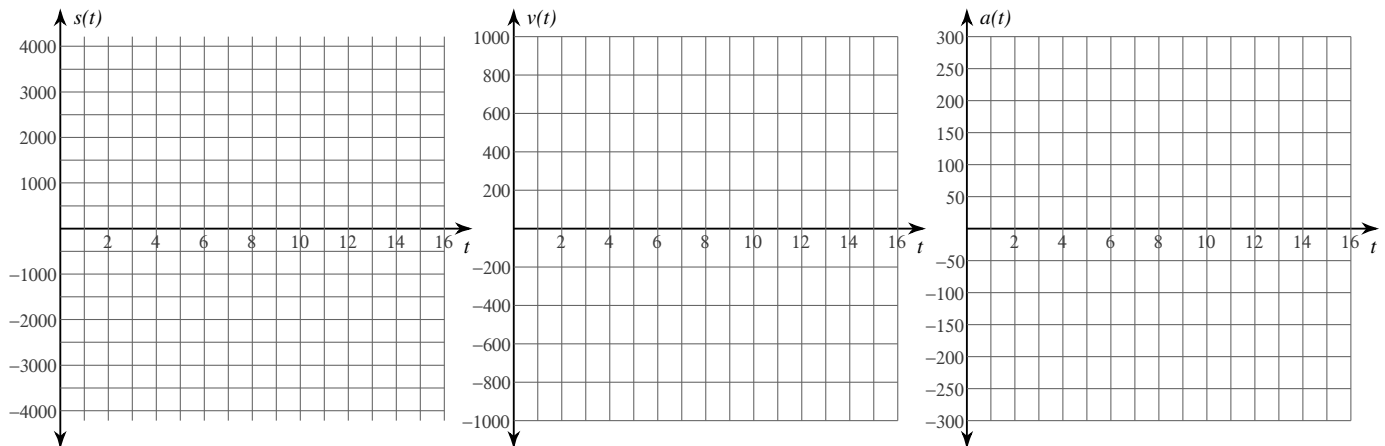
A particle moves along a coordinate line. Its velocity function is  $v(t)$  for  $t \geq 0$ . For each problem, find the position function  $s(t)$ . You may use the blank graphs to sketch  $s(t)$  and  $v(t)$ .

1)  $v(t) = 3t^2 - 22t$ ;  $s(0) = 0$



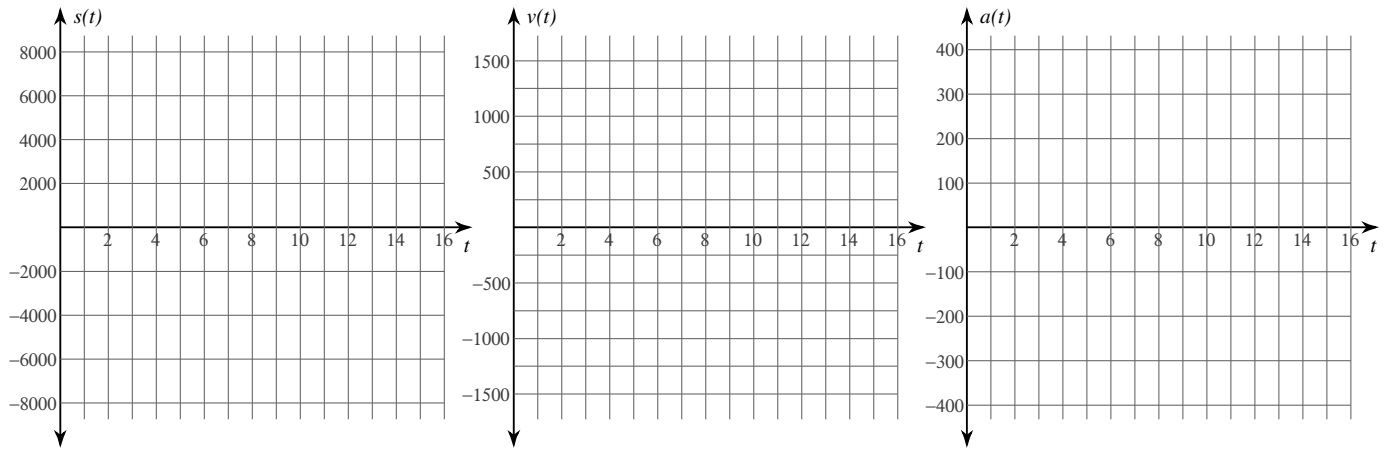
A particle moves along a coordinate line. Its acceleration function is  $a(t)$  for  $t \geq 0$ . For each problem, find the position function  $s(t)$  and the velocity function  $v(t)$ . You may use the blank graphs to sketch  $s(t)$ ,  $v(t)$ , and  $a(t)$ .

2)  $a(t) = -12t^2 + 60t$ ;  $s(0) = 0$ ;  $v(0) = 0$



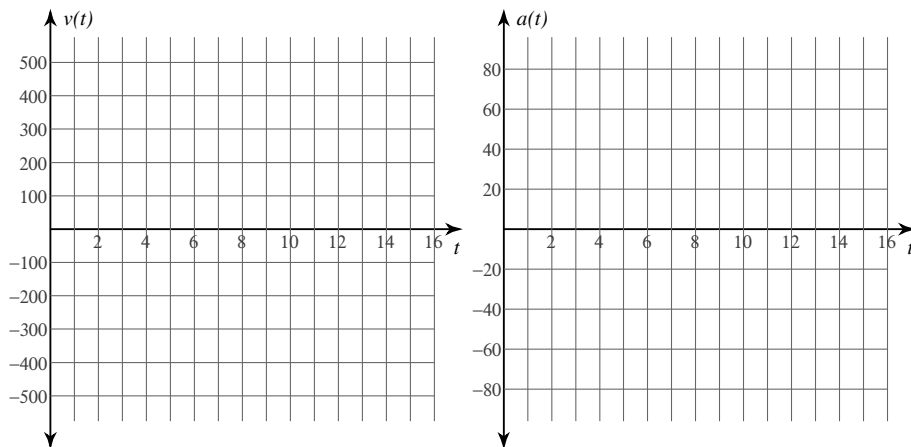
A particle moves along a coordinate line. Its acceleration function is  $a(t)$  for  $t \geq 0$ . For each problem, find the position, velocity, speed, and acceleration at the given value for  $t$ . You may use the blank graphs to sketch  $s(t)$ ,  $v(t)$ , and  $a(t)$ .

3)  $a(t) = -12t^2 + 72t$ ;  $s(0) = 0$ ;  $v(0) = 0$ ; at  $t = 5$



A particle moves along a coordinate line. Its acceleration function is  $a(t)$  for  $t \geq 0$ . For each problem, find the displacement of the particle and the distance traveled by the particle over the given interval. You may use the blank graphs to sketch  $v(t)$  and  $a(t)$ .

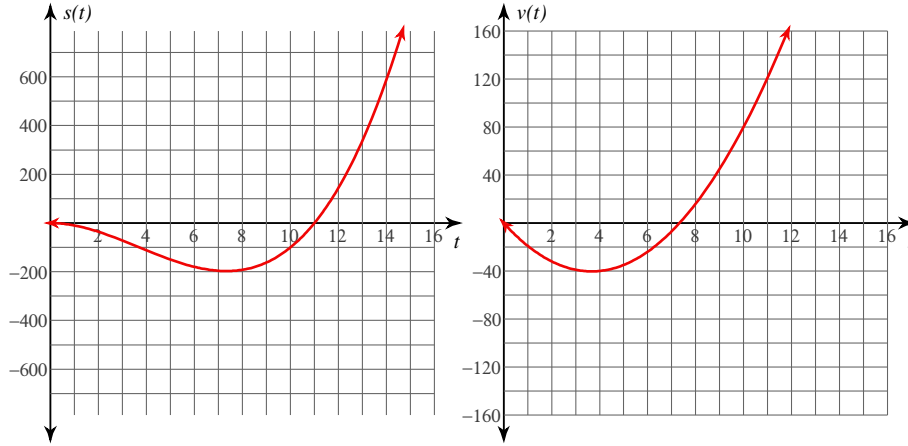
4)  $a(t) = 6t - 48$ ;  $v(0) = 144$ ;  $1 \leq t \leq 8$



### Motion Along a Line Revisited

A particle moves along a coordinate line. Its velocity function is  $v(t)$  for  $t \geq 0$ . For each problem, find the position function  $s(t)$ . You may use the blank graphs to sketch  $s(t)$  and  $v(t)$ .

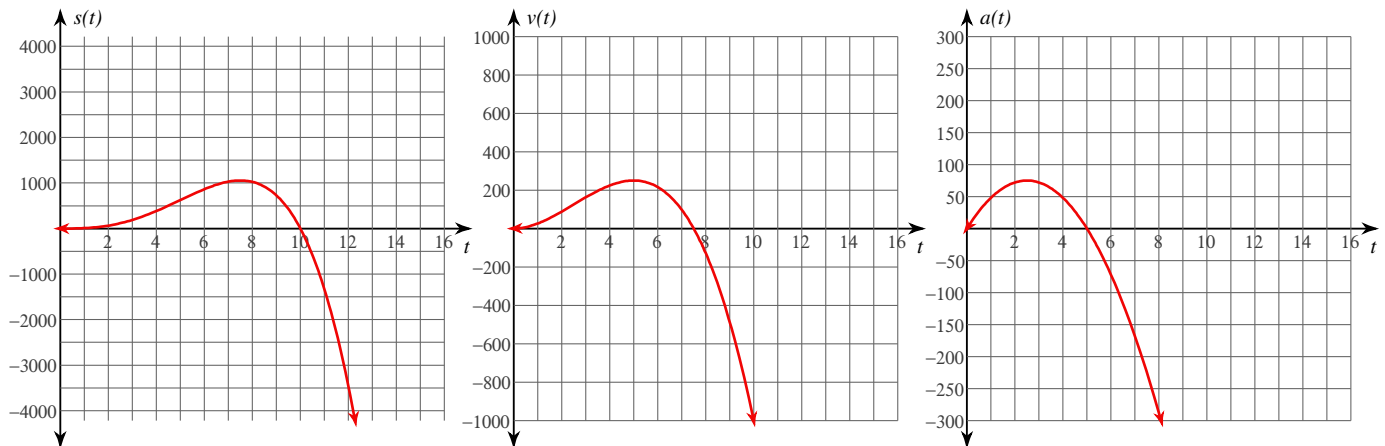
1)  $v(t) = 3t^2 - 22t$ ;  $s(0) = 0$



$s(t) = t^3 - 11t^2$

A particle moves along a coordinate line. Its acceleration function is  $a(t)$  for  $t \geq 0$ . For each problem, find the position function  $s(t)$  and the velocity function  $v(t)$ . You may use the blank graphs to sketch  $s(t)$ ,  $v(t)$ , and  $a(t)$ .

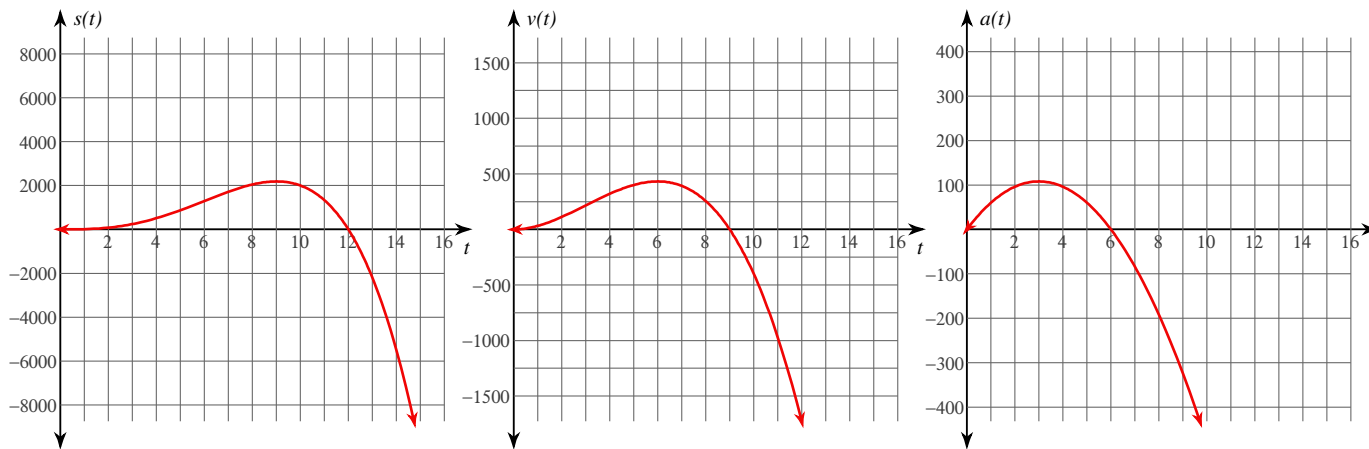
2)  $a(t) = -12t^2 + 60t$ ;  $s(0) = 0$ ;  $v(0) = 0$



$s(t) = -t^4 + 10t^3$ ,  $v(t) = -4t^3 + 30t^2$

A particle moves along a coordinate line. Its acceleration function is  $a(t)$  for  $t \geq 0$ . For each problem, find the position, velocity, speed, and acceleration at the given value for  $t$ . You may use the blank graphs to sketch  $s(t)$ ,  $v(t)$ , and  $a(t)$ .

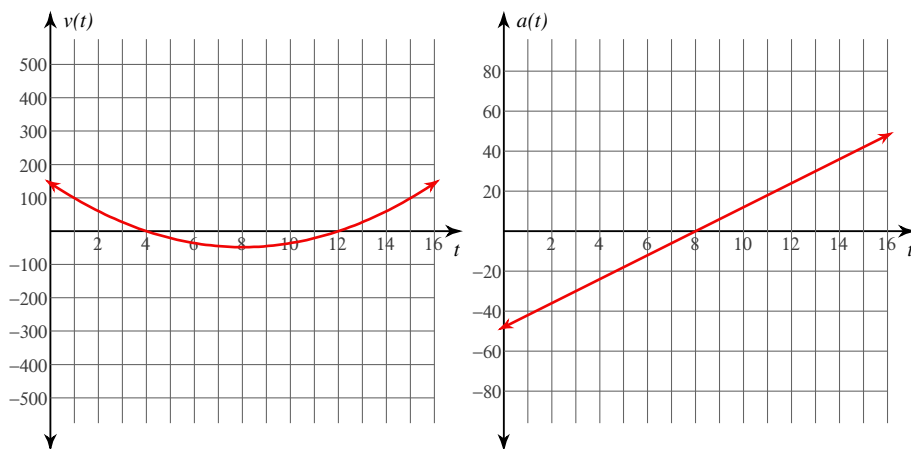
3)  $a(t) = -12t^2 + 72t$ ;  $s(0) = 0$ ;  $v(0) = 0$ ; at  $t = 5$



$s(5) = 875$ ,  $v(5) = 400$ , speed at 5 = 400,  $a(5) = 60$

A particle moves along a coordinate line. Its acceleration function is  $a(t)$  for  $t \geq 0$ . For each problem, find the displacement of the particle and the distance traveled by the particle over the given interval. You may use the blank graphs to sketch  $v(t)$  and  $a(t)$ .

4)  $a(t) = 6t - 48$ ;  $v(0) = 144$ ;  $1 \leq t \leq 8$



Displacement: 7  
Distance traveled: 263