

a. Describe the motion of the car during each of the four parts of its motion.

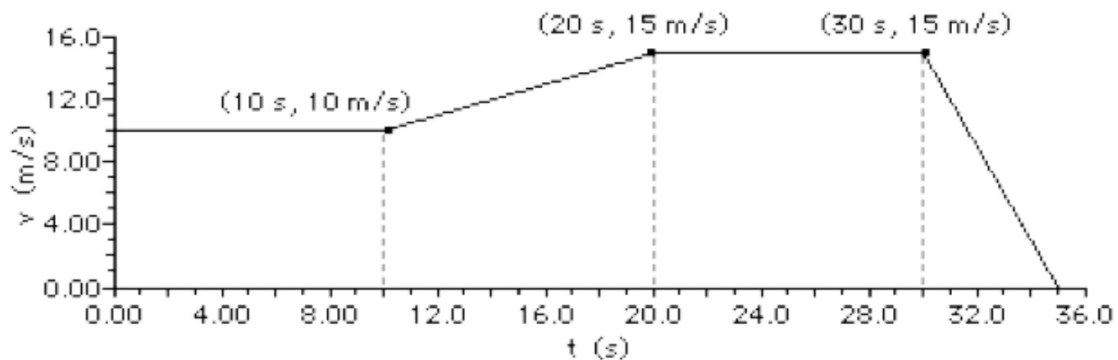
0-10 s: + dir, constant vel./speed, no acceleration ( $a=0 \frac{m}{s^2}$ )

10-20 s: + dir, speeding up, + accel.

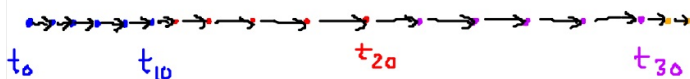
20-30 s: + dir, constant vel./speed, no acceleration

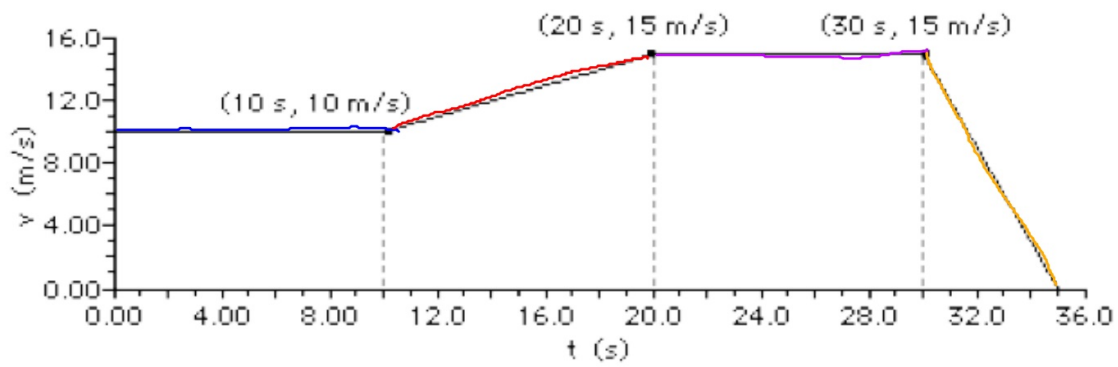
30-35 s: + dir, slowing down, -acceleration

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b. Construct a dot diagram for the car's motion.

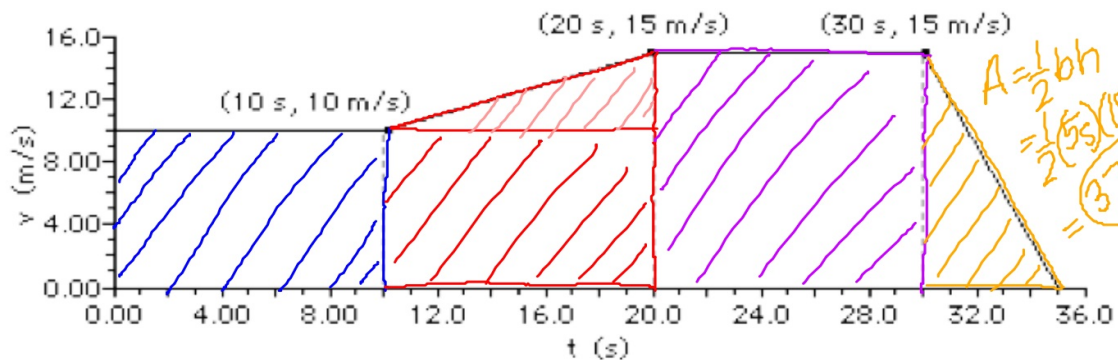




c. Determine the acceleration of the car during each of the four parts of its motion. PSYW

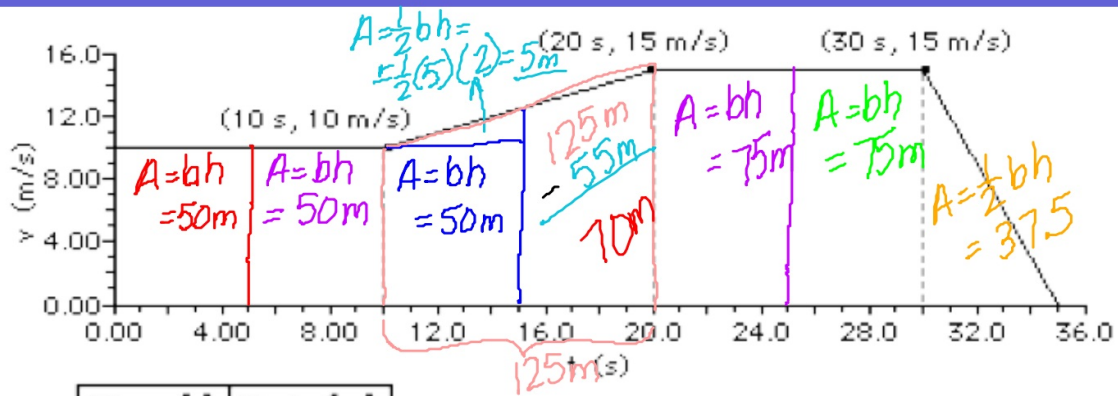
<u>0-10 s</u>	<u>10-20 s</u>	<u>20-30 s</u>	<u>30-35 s</u>
$a = \frac{10 - 10 \text{ ms}^{-1}}{10 - 0 \text{ s}}$	$a = \frac{15 - 10 \text{ ms}^{-1}}{20 - 10}$	$a = \frac{15 - 15 \text{ ms}^{-1}}{30 - 20 \text{ s}}$	$a = \frac{0 - 15 \text{ ms}^{-1}}{35 - 30 \text{ s}}$
$a = 0.00 \text{ ms}^{-2}$	$a = .500 \text{ ms}^{-2}$	$a = 0.00 \text{ ms}^{-2}$	$a = -3.00 \text{ ms}^{-2}$

(0.10)



d. Determine the displacement of the car during each of the four parts of its motion. PSYW

<u>0-10 s</u>	<u>10-20 s</u>	<u>20-30 s</u>	<u>30-35 s</u>
$A = b \cdot h$ $= (10\text{s})(10\text{ms}^{-1})$	$A_{\square} = bh = (10\text{s})(10\text{ms}^{-1})$ $= 100\text{m}$	$A = bh =$ $= (10\text{s})(15\text{ms}^{-1})$	
$A = 100 \text{ m}$ $(1.00 \times 10^2 \text{ m})$	$A_{\Delta} = \frac{1}{2}bh = \frac{1}{2}(10\text{s})(5\text{ms}^{-1})$ $= 25\text{m}$	$= 150 \text{ m}$ $(1.50 \times 10^2 \text{ m})$	
	$125\text{m}$		



Time (s)	Pos'n (m)
0	0
5	50
10	100
15	155
20	225
25	300
30	375
35	413

