

## Worksheet: Kinematics Part 2 - $v_f$

$$v_{\text{final}} = v_{\text{initial}} + at$$

NAME:

1. Read the following problem
2. Highlight your "proof" for assigning variables
3. List the givens
4. Solve
5. Write your answer with the proper units

Georgia is jogging with a velocity of 4.00 m/s when she accelerates at 2.00 m/s<sup>2</sup> for 3.00 seconds. How fast is Georgia running now? - 3 pts -

- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Final velocity - m/s, comes to a stop/rest, finally/end, how fast...
- Acceleration - m/s<sup>2</sup>
- Time - s, how long...

Givens

Work

Answer

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A cat is moving at 18.0 m/s when it accelerates at  $4 \text{ m/s}^2$  for 2 seconds. What is his new velocity? - 3 pts -

- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Final velocity - m/s, comes to a stop/rest, finally/end, how fast...
- Acceleration -  $\text{m/s}^2$
- Time - s, how long...

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A car traveling initially at 3.12 m/s accelerates at the rate of  $2.02 \text{ m/s}^2$  for a time of 6.52 s. What is its velocity at the end of the acceleration? - 3 pts -

- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Final velocity - m/s, comes to a stop/rest, finally/end, how fast...
- Acceleration -  $\text{m/s}^2$
- Time - s, how long...

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A race car is traveling at +76 m/s when it slows down at  $-9 \text{ m/s}^2$  for 4 seconds. What is his new velocity? - 3 pts -

- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Final velocity - m/s, comes to a stop/rest, finally/end, how fast...
- Acceleration -  $\text{m/s}^2$
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A bicyclist is traveling at +25 m/s when he begins to decelerate at  $-4 \text{ m/s}^2$ . How fast is he traveling after 5 seconds? - 3 pts -

- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Final velocity - m/s, comes to a stop/rest, finally/end, how fast...
- Acceleration -  $\text{m/s}^2$
- Time - s, how long...

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A car starts from rest and accelerates uniformly to reach a speed of 21 m/s in 7.0 s. What was the speed of the object after 2.0 seconds? - 3 pts -

- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Final velocity - m/s, comes to a stop/rest, finally/end, how fast...
- Acceleration -  $\text{m/s}^2$
- Time - s, how long...

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