



## PHYSLETS ANSWER SHEET

WS3A5

Waves / Set 3 / Animation 5

Name \_\_\_\_\_ Class \_\_\_\_\_

<Show all work on calculations. Include proper units. Explanations require complete sentences.>

The movie clip shows an F-18 fighter breaking the sound barrier.

- 1) In the movie clip there is no sound. When would the observers on the aircraft carrier hear the sonic boom? (before, after, or when the jet passes them) Explain.
  
- 2) The cloud is the result of the rapid change in pressure. After the compression wave passes the air rapidly expands cooling adiabatically to the dew point and the vapor in the air condenses on small particles in the air. Explain the cause of the tremendous compression wave (and the trough that follows it).
  
- 3) Why is it more likely to observe this phenomenon when the ship is flying low rather than high?