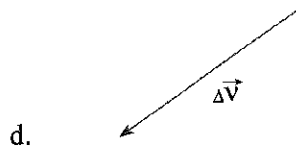
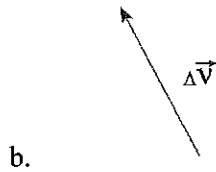
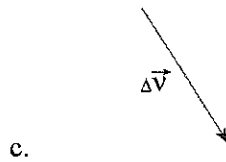
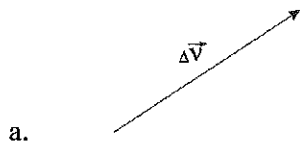
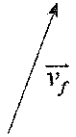
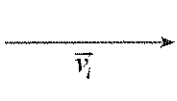


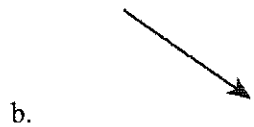
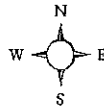
Physics 12 - Vector Practice

Short Answer

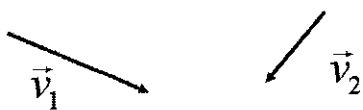
1. Initial velocity vector \vec{v}_i and final velocity vector \vec{v}_f are shown below. Which of the following represents the change in velocity $\Delta\vec{v}$?



2. An aircraft is flying due south. Some time later it is flying due east. Which vector best represents the aircraft's change in velocity?



3. Consider the two vectors shown below. Please draw the resultant vector of $\vec{v}_1 - \vec{v}_2$



4. Vector of $\vec{A} = 25 \text{ m/s @ } 39.5^\circ \text{ S of W}$ **and** Vector $\vec{B} = 38.5 \text{ m/s. @ } 35^\circ \text{ N of E}$.
What is the resultant vector of $\vec{A} + \vec{B}$?

ANSWER:

5. Vector of $\vec{A} = 46 \text{ m @ } 13^\circ \text{ N of W}$ **and** Vector $\vec{B} = 7 \text{ m. @ } 59.5^\circ \text{ W of S}$.
What is the resultant vector of $\vec{A} - \vec{B}$?

ANSWER:

Name: _____

ID: A

6. Vector $\vec{A} = 32.5 \text{ m/s @ } 76^\circ \text{ W of N}$ **and** Vector $\vec{B} = 44.5 \text{ m/s @ } 31^\circ \text{ W of N}$.
a) What is the resultant vector of $\vec{A} + \vec{B}$

ANSWER:

- b) What is the resultant vector of $\vec{A} - \vec{B}$

ANSWER:

7. A pilot leaves their city at 12:30 pm and WANTS to fly West to an airport 1515 km away. They need to arrive at the airport at 6:00 pm.
a) What is their airspeed and direction if there is a 39km/h wind blowing $44.5^\circ \text{ N of E}$.

ANSWER:

- b) What is the minimum amount of fuel they need to carry if their plane burns 128 litres/h of fuel for every 100 km/h they fly?

ANSWER:

8. A swimmer wants to swim North across a 228 metres wide river.

a) How much time does it take them to cross a river if they can swim at 9.5 m/s in still water but the river has a current of 6 m/s E?

ANSWER:

b) How far downstream from the point directly opposite the starting point will the swimmer get out of the water after having crossed the river?

ANSWER:

c) The swimmer wants to reach the other side directly opposite the start point
What is their relative speed to someone standing on shore?
And what direction do they need to head?

ANSWER:

d) How long would it take them to cross?

ANSWER:
