1. For constant acceleration, a_x which of the following is wrong?

(a) $v_{avg-x} = \frac{v_x + v_{0x}}{2}$

(b) $a_{av-x} = a_x$

(c) $v_x = v_{0x} + a_x t$

(d) $x - x_0 = \left(\frac{v_x - v_{0x}}{2}\right) t$

2. Which of the following statements is wrong?

(a) When v_x and a_x have the same sign, the body is speeding up
(b) When v_x and a_x have opposite signs, the body is slowing down
(c) When v_x and a_x have the same sign, the body is slowing down
(d) If v_x and a_x are positive, the body is moving in the positive direction with increasing speed

3. Which of the following statements is wrong?

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(a) If v_x and a_x are negative, the body is moving in the negative direction with decreasing speed
(b) If v_x and a_x have opposite signs, the body is slowing down
(c) If v_x is positive and a_x is negative, the body is moving in the positive direction with decreasing speed
(d) If v_x is negative and a_x is positive, the body is moving in the negative direction with decreasing speed

4. A man wishes to swim across a river 600 m wide. If he can swim at the rate of 4 km/h in still water and the river flows at 2 km/h, then in what direction must he swim to reach a point exactly opposite to the starting point and when will he reach it?

(a) 30^0 West of North, 10.2 s
(b) 30^0 East of North, 10.2 s
(c) Straight North, 10.2 s
(d) None of the above

5. The position of the front bumper of a test car under microprocessor control is given by $x(t) = 2.17\ m + (4.80\ m/s^2)t^2 - (0.100\ m/s^6)t^6$. When its velocity will be zero?

(a) 1 s (b) 2 s (c) 3 s (d) 4 s

6. A stone is thrown up vertically with a velocity of 20 m/s. Find out the instances at which the magnitudes of its, (i) momentum will be half its initial value (Take $g = 10\ m/s^2$).

(a) after 1 s only (b) after 1 s and 3 s (c) after 3 s only (d) after 1 s & 2 s

7. A stone is thrown up vertically with a velocity of 20 m/s. Find out the instances at which the (i) kinetic energy will be half its initial value (Take $g = 10\ m/s^2$).

(a) Nearly after 0.6 s only
(b) nearly after 0.6 s and 2.8 s
(c) after 2.8 s only
(d) after 0.6 s & 1.2 s