A. \[18 \text{ pts.}\] Identical forces \( F \) act on two blocks, A with mass \( m \) and B with mass \( 2m \). Each block is initially at rest, sits on a horizontal frictionless surface, and is moved a distance \( \Delta x \) as a result of the force \( F \) that is applied. In the spaces provided enter A, B, or same to best fit the statement that follows.

1. \( \underline{\text{same}} \) The block on which the greater amount of work is done.
2. \( \underline{A} \) The block experiencing the larger acceleration.
3. \( \underline{\text{same}} \) The block with the larger KE after moving the distance \( \Delta x \).
4. \( \underline{A} \) The block with the greater speed after moving the distance \( \Delta x \).
5. \( \underline{B} \) The block that takes the longer time to travel the distance \( \Delta x \).
6. \( \underline{B} \) The block with the larger momentum after traveling the distance \( \Delta x \).

B. \[14 \text{ pts.}\] At the initial instant \( t_0 = 0 \) the crank handle is released and the water bucket accelerates into the well while the rope unravels from the shaft. For the statements below, circle the parenthetical item that correctly completes the sentence.

1. At any instant later than \( t_0 \) the angular speed of the crank handle is \( \underline{\text{equal to, greater than, less than}} \) the angular speed of the shaft.
2. The constant angular acceleration of the shaft is \( \underline{\text{equal to, greater than, less than}} \) the angular acceleration of the crank handle.
3. At any instant later than \( t_0 \) the tangential speed of the crank handle is \( \underline{\text{equal to, greater than, less than}} \) the tangential speed of a point on the shaft.
4. The tangential acceleration of the crank handle is \( \underline{\text{equal to, greater than, less than}} \) the tangential acceleration of a point on the shaft.
5. The downward acceleration of the water bucket is \( \underline{\text{equal to, greater than, less than}} \) the tangential acceleration of the crank handle.
6. The downward acceleration of the water bucket is \( \underline{\text{equal to, greater than, less than}} \) the tangential acceleration of a point on the shaft.
7. At any instant later than \( t_0 \) the downward speed of the water bucket is \( \underline{\text{equal to, greater than, less than}} \) the tangential speed of the crank handle.