2021A27 CHARGE, RATES

ANSWERS

Level 1: To figure out how long the drone may be flown; simple multiplication and division works best. First, lets calculate the total capacity of both batteries the drone may draw power from.

$$(4280\ mAH\ per\ battery) * (2\ batteries) = (8560\ mAH)$$

Since the pilot will want to start landing at 25% battery capacity, we will calculate that next.

$$(8560\ mAH) * 0.75 = 6420\ mAH$$

Then we need to figure out the total draw from both batteries. Remember, the drone used by One Energy simultaneously draws power from both batteries.

$$(611\ mAH\ per\ min) * (2\ batteries) = (1222\ mAH\ per\ min)$$

With all the information we have calculated, lets divide the capacity by the draw to find out the flight time before the landing sequence.

$$t = \frac{6420\ mAH}{1222\ mAH\ per\ min}$$

$$t = 5\ min$$

The drone can be flown for approximately 5 minutes.

Level 2: Level two's strategy is the same as level one, but we will start with calculating how the increase in wind speed affects the draw.

$$305.5\ mAH\ per\ \text{min}\ per\ battery * 2\ mph = 611\ mAH\ per\ \text{min}\ per\ battery$$

Then we can add the increase in drawn to the original draw to calculate total draw.

$$611\ mAH\ per\ \text{min}\ per\ battery\ + 611\ mAH\ per\ \text{min}\ per\ battery = 1222\ mAH\ per\ \text{min}\ per\ battery$$

A single drone battery draw is 1222 mAH per minute.

A drone shot of two constructed rotors before they are brought up to the top of the tower.