

**CHECK UP 8.8: BODY SURFACE AREA (BSA)**

Using the BSA chart (see Fig. 8-3), determine the BSA of the patient. Be sure to note the dimensions (cm, kg, inches, lb).

1. 50 cm and 6 kg
2. 45 inches and 36 lb
3. 80 cm and 25 lb
4. 14 inches and 7.5 lb
5. 58 cm and 9 kg

**CHECK UP 8.9: RECONSTITUTION OF POWDERED MEDICATIONS**

Add 4 mL of sterile water. Resulting solution will contain 250 mg of medication/5 mL.

1. What amount of sterile water would you add to the vial?
2. What conversion factor would you use to calculate the dosage?

Add 1.7 mL diluent. Resulting solution contains 250 mg medication/1 mL.

3. What amount of diluent will you add to the vial?
4. What conversion factor would you use to calculate the dosage?

Add 33 mL diluent. Resulting solution will contain 500,000 units/mL.

5. How much diluent will you add to the vial?
6. What conversion factor would you use to calculate the dosage?

Add 19 mL of sterile water for injection. Resulting solution contains 10 mg/mL of medication.

7. How much diluent will you add to the vial?
8. What conversion factor would you use to calculate the dosage?

Electronic Regulator Pumps

Electronic regulator pumps are machines that deliver and monitor IV fluids at a set rate. These pumps allow the health-care professionals to perform other tasks and will alert health-care professionals if a problem arises. The physician or practitioner writes an order in milliliters to be infused over a certain period of time (e.g., 1,000 mL over 2 hours or 400 mL over 8 hours). The IV tubing, which is specific to the type of pump, is run through an electronic regulator; someone needs to program the rate for the regulator. The rate is expressed as follows:

$$\frac{\text{Total mL ordered}}{\text{Total time ordered in hours}} = \text{mL/hour (rounded to a whole number)}$$

Example: If the physician ordered 1,000 mL to be administered over 2 hours:

Step 1: Divide total fluid (mL) to be administered by time (hr).

$$\frac{1,000 \text{ mL}}{2 \text{ hours}} = \frac{500 \text{ mL}}{1 \text{ hour}}$$

Step 2: Does this seem reasonable? Cross-multiply to double-check (Check Up 8.10).