CHECK UP 6.26: PROPORTIONAL RATIOS

Check whether these ratios are proportional. Write true or false.

1:4::100:200 _____ 1:5::20:100 _____

1:2::50:100 _____ 1:6::2:7 _____

1:3::3:6 _____

CHECK UP 6.27: EQUAL RATIOS

Check whether these ratios are equal. Write true or false.

1:2::2:5 _____ 200:150::1:2 _____

2:3::4:6 _____ 250:200::5:4 _____

10:100::2:20 _____

SOLVING FOR AN UNKNOWN

A prescriber writes orders for a dose of medication. When you go to the medication cupboard, you find a vial of the correct medication, but not in the dosage you need. Because you must solve for the unknown amount of medication you need to administer, you must know how to solve for an unknown.

If you are given a ratio or fraction, you need to find an unknown. For example:

$$\frac{100}{200} = \frac{1}{?}$$

This could also be written 100:200::1:?

There are several ways to solve for the unknown value (indicated by the question mark). One way is to use words.

100 relates to 200 as 1 relates to an unknown number.

100 is 100 times greater than 1.

Therefore, 200 is 100 greater than the unknown number, which is 2.

Another way is to use means and extremes.

100:200::1:?
200 × 1 (means) = 200
100 × ? (extremes) =
? = 200/100
? = 2

You can also use fractions and cross-multiply.

$$\frac{100}{200} = \frac{1}{?}$$
$$100 \times ? = 1 \times 200$$
$$100? = 200$$
$$100?/100 = 200/100$$
$$? = 2$$