

Bar diagrams to solve problems

name: _____

There are some ratio problems where you don't really need a bar diagram:

1. There are $\frac{2}{3}$ as many pens as pencils. There are 30 pencils, How many pens are there?
2. There are $\frac{3}{4}$ as many cats as dogs. There are 12 cats. How many dogs are there?

There are some other ratio problems, where a bar diagram is *really useful*.

3. Amy and Bob share a plate of cookie. Amy gets $\frac{2}{3}$ as many as Bob. If there are 30 cookies on the plate, how many do each get?

4. A package of stickers has stars and hearts. There are $\frac{2}{5}$ as many stars as hearts. If there are 90 more hearts than stars, how many stars are there?

Problems to do with ratios and bar diagrams (1-step)

5. $\frac{3}{10}$ of the beads in a jar are red. The rest are blue. If there are 200 more blue beads than red, how many beads are there altogether?

6. Mrs. Johnson mixed meat with potatoes in the ratio of 5:3 to make 4 kg of meat loaf. How much meat did she use?

Some problems that may need more than one step

7. A pole 135 cm long, is painted red, white, and blue in the ratio 3:4:2. What length of the pole is painted white?

8. A tank is $\frac{3}{5}$ full with water. If 30 gallons more water are needed to fill the tank completely, find the capacity of the tank.

9. The ratio of Zoe's money to Yolanda's is 3:7. Yolanda has \$64 more than Zoe. If Yolanda gives $\frac{1}{4}$ of her money to Zoe, what will be the new ratio of Zoe's money to Yolanda's?

10. Alice has 50% of the amount of money Betty has, and Carrie has $\frac{2}{5}$ of what Alice has. If Betty has \$364 more than Carrie, how much money does Alice have? (hint: show bars for all 3 girls side by side)