1. a. Write a list of X's and O's where there are 2/5 as many X's as O's. X X O O O O O	b. Write another list of X's and O's where there are 2/5 as many X's as O's and where there are a different number of X's and O's than in your first example.
2. a. Write a list of X's and O's where 2/5 of the symbols are X's. X X O O O	b. Write another list of X's and O's where 2/5 of the symbols are X's and where there are a different number of X's and O's than in your first example

3. I have a bag of cookies. Eight of the cookies are oreos and 12 of the cookies are chocolate chip.

a. Write a ratio sentence comparing the number of oreos to the number of chocolate chip cookies.

The ratio of O to CC is 2 : 3

b. Write a ratio sentence comparing the number of chocolate chip cookies to the number of oreos.

c. Write a multiplicative comparison sentence comparing the number of oreos to the number of chocolate chip cookies.

There are 2/3 as many O as CC

d. Write a multiplicative comparison sentence comparing the number of chocolate chip cookies to the number of oreos.

There are 1½ times as many CC as O

e. Write a part-whole fraction sentence for the number of cookies that are oreos. $8/20 = 2/5$

2/5 of the cookies are O

f. Write a part-whole fraction sentence for the number of cookies that are chocolate chip.

3/5 of the cookies are CC.

g. Write a sentence for the percent of the cookies that are oreos.

40% of the c. are O

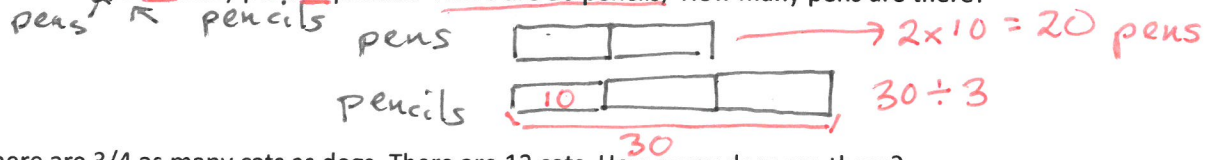h. Write a sentence for the percent of cookies that are chocolate chip.

60% of the C are O.

Bar diagrams to solve problems   name:_____

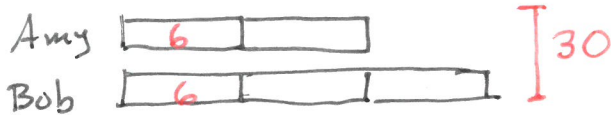**There are some ratio problems where you don't really need a bar diagram:**

1. There are 2/3 as many pens as pencils. There are 30 pencils, How many pens are there?

pens ⬏ pencils

pens [· |] ⟶ 2×10 = 20 pens

pencils [10 | |]   30 ÷ 3

30

2. There are 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 2/3 as many as Bob. If there are 30 cookies on the plate, how many do each get?

total

Amy [6 |] ⎤ 30
Bob [6 | |] ⎦

30 ÷ 5 = 6
Amy gets 2×6 = 12
Bob gets 3×6 = 18

4. A package of stickers has stars and hearts. There are 2/5 as many stars as hearts. If there are 90 more hearts than stars, how many stars are there?
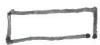
stars [30|]   90
hearts [30| | |]

90 ÷ 3 = 30

30 × 2 = 60 stars.

Problems to do with ratios and bar diagrams (1-step)
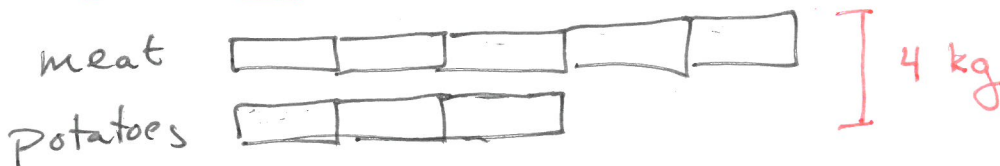
5. 3/10 of the beads in a jar are red. The rest are blue. If there are 200 more blue beads than red, how many beads are there altogether?

3 / 1 0
  ↑   ↑
red   all

[   ]

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?

meat [| | | |] ⎤ 4 kg
potatoes [| |] ⎦

4 ÷ 8 = ½