1/4 3/8 1/16

Adding with Unlike Denominators

Taking what we already know and using it to help us solve something new!

Deb Hill: LFES

Adding Fractions

- **Don’t forget to update your Table of Contents**

- **On your new page write the following problems if you have not already done so.**

Adding Fractions with Unlike Denominators

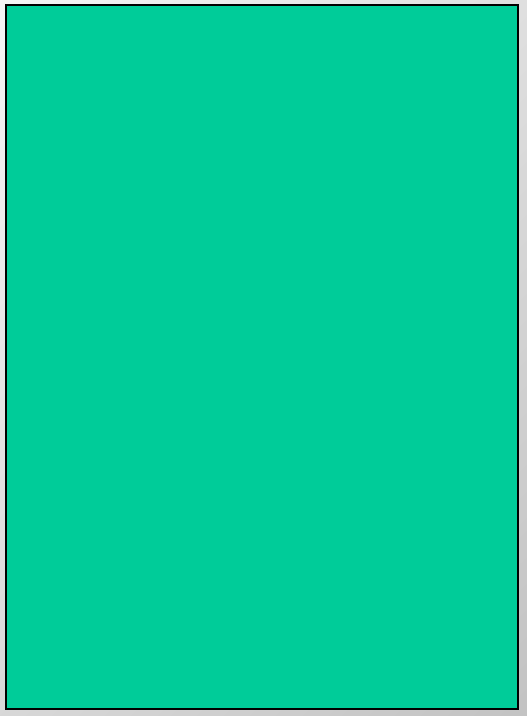
1. 1/16 + 1/4 = ____
2. 1/8 + 1/4 = ____
3. 1/8 + 1/16 = ____

You already know the answers

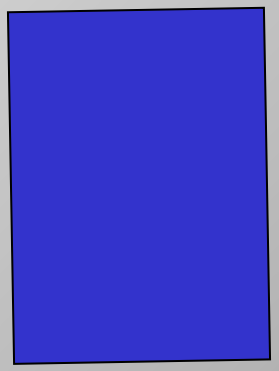
Let's think back to…

Gallon Man !

Remember?

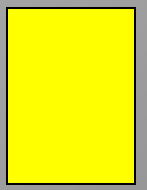


GALLON

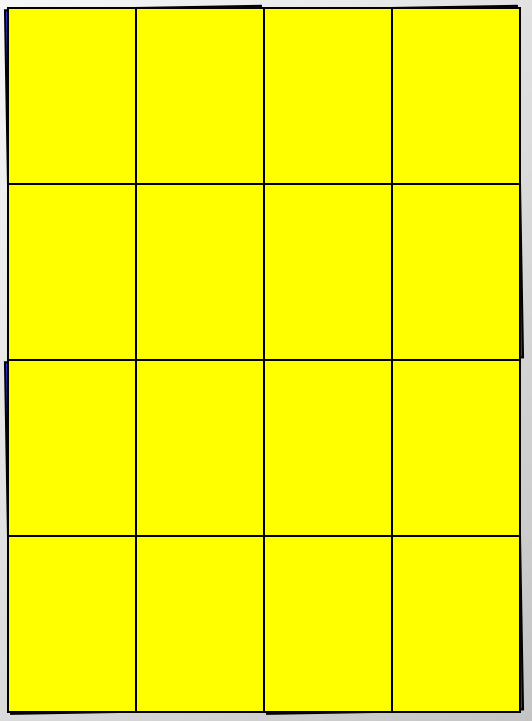


QUART

PINT

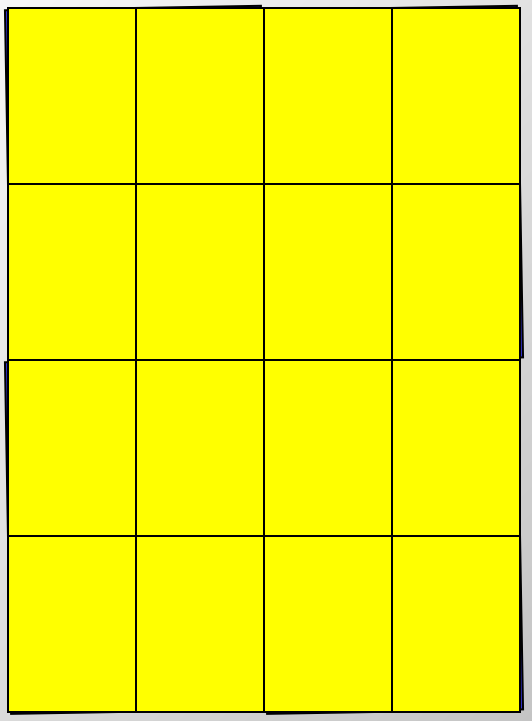


CUP



Here is the way they “stack-up.”

1 Gallon

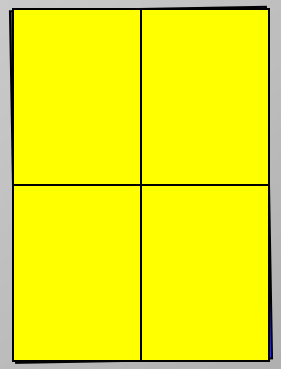


1 Gallon

1 Gallon = 4 quarts

1 Gallon = 8 pints

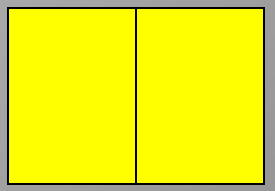
1 Gallon = 16 cups



1 Quart

1 Quart = 2 pints

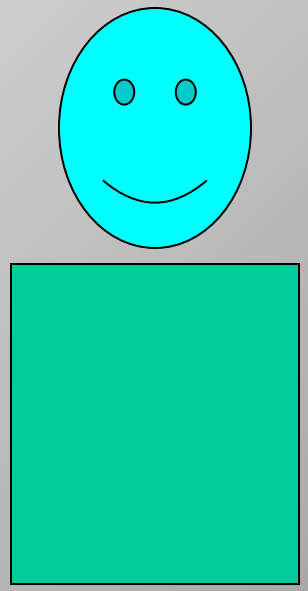
1 Quart = 4 cups



1 Pint

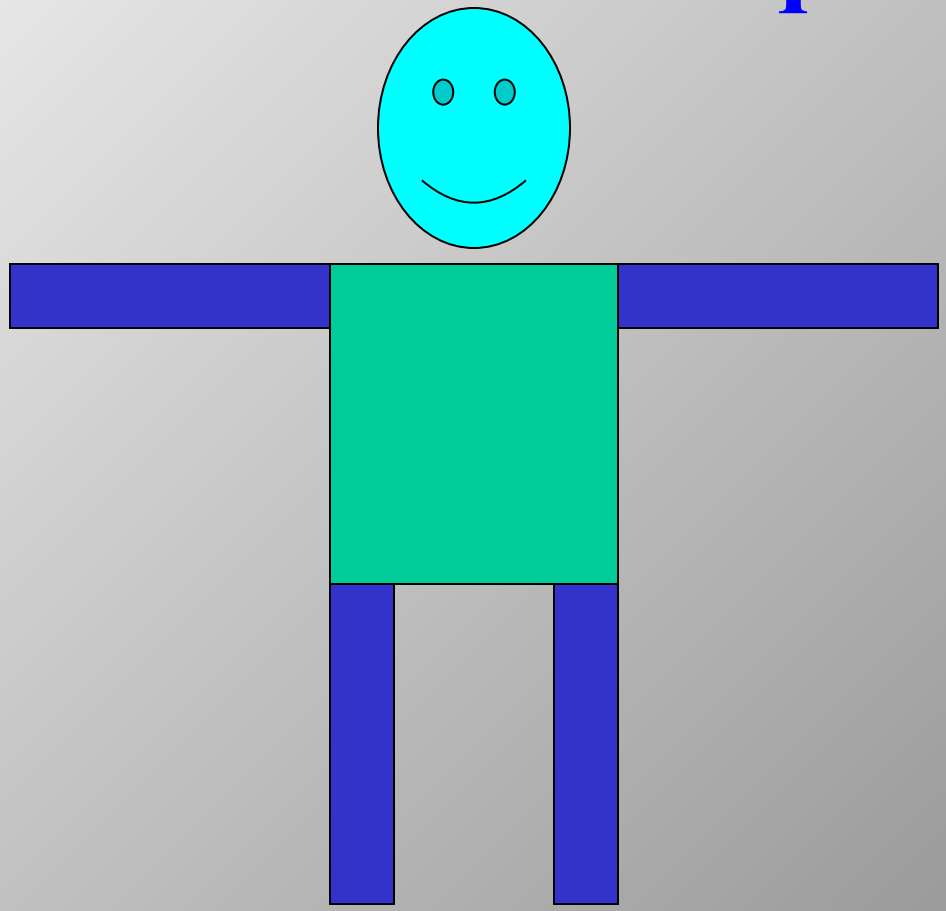
1 Pint = 2 cups

Remember how we built "Gallon Man?"



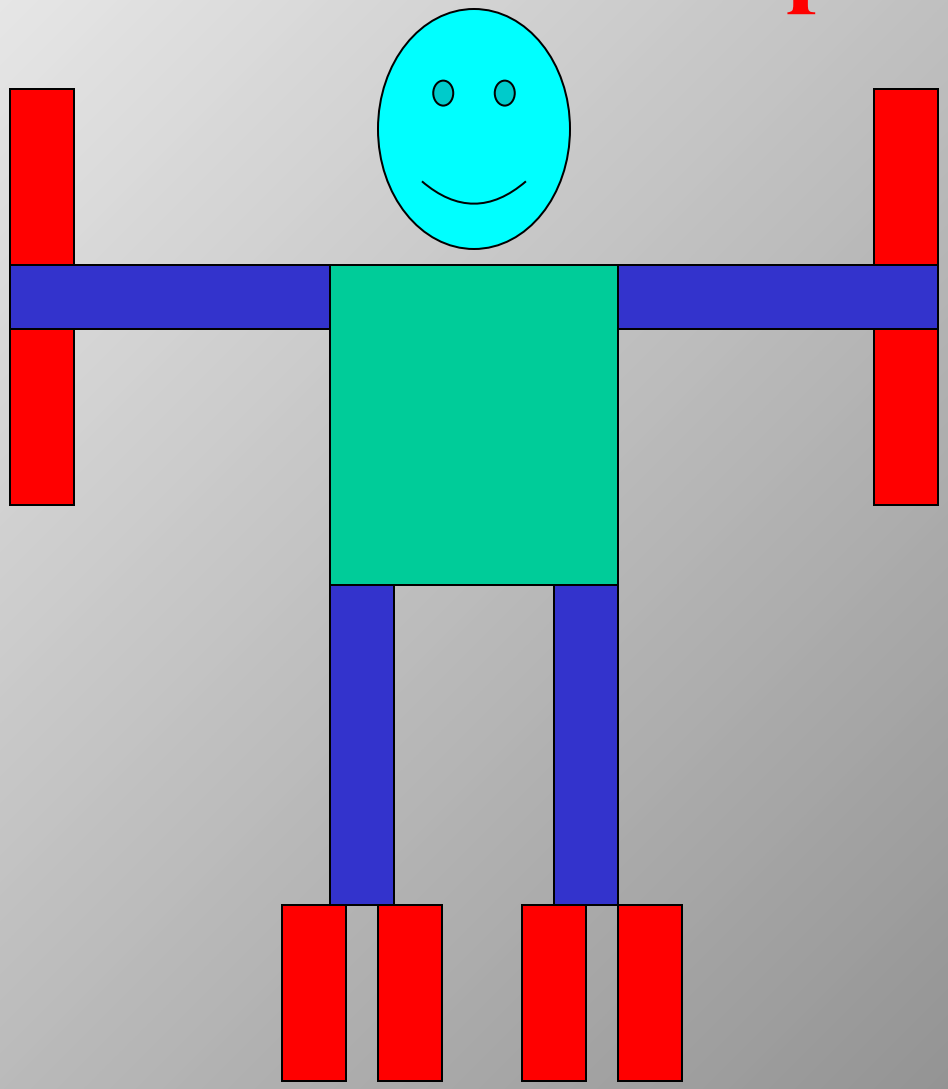
1 GALLON

“Gallon Man” and quarts



One Gallon = Four Quarts

“Gallon Man” and pints

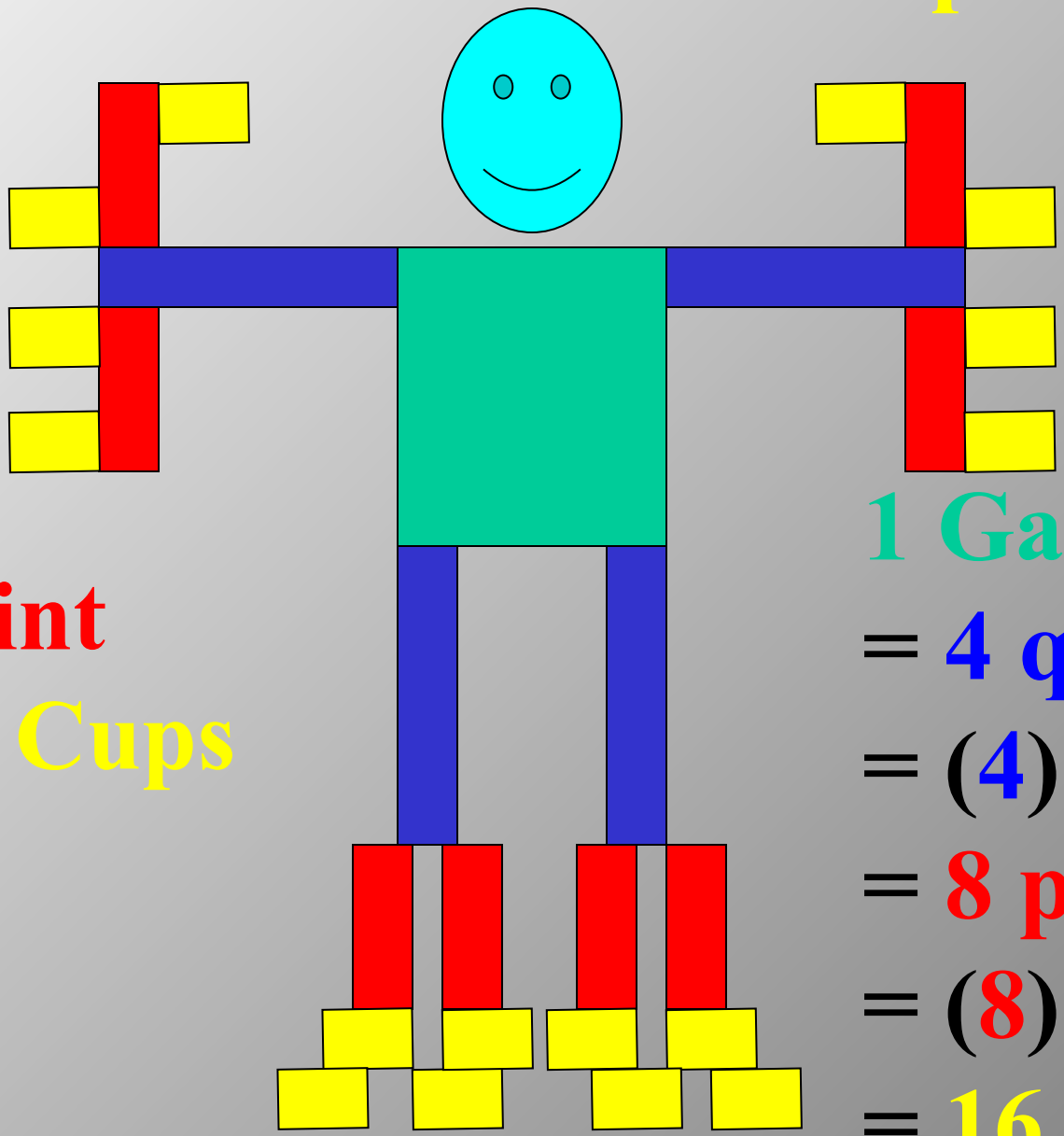


1 Quart

= 2 Pints

1 Gallon = 4 quarts = (4) (2) = 8 pints

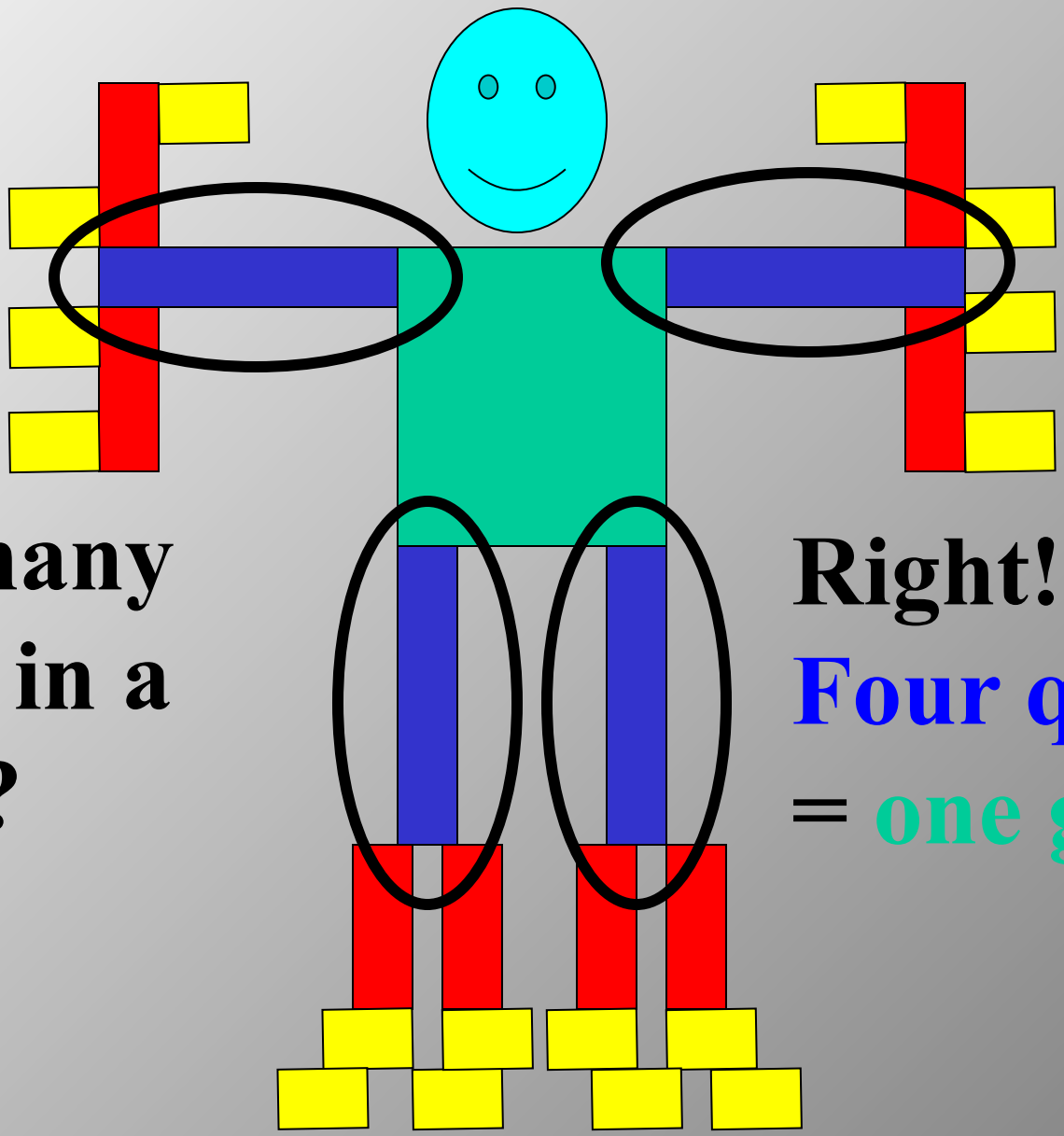
“Gallon Man” and cups



One Pint
= Two Cups

1 Gallon
= 4 quarts
= (4) (2)
= 8 pints
= (8) (2)
= 16 cups

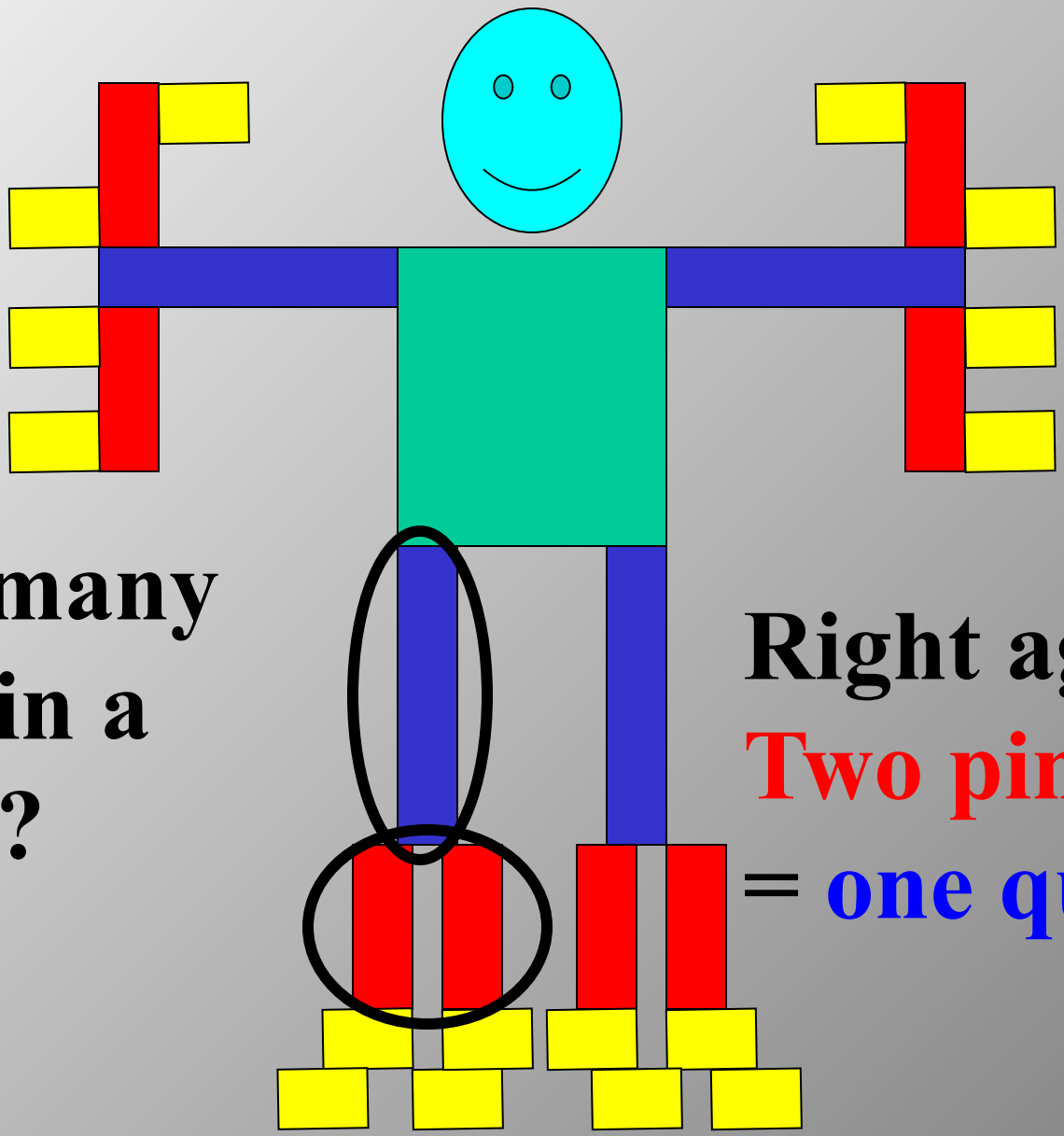
Let's do some more.



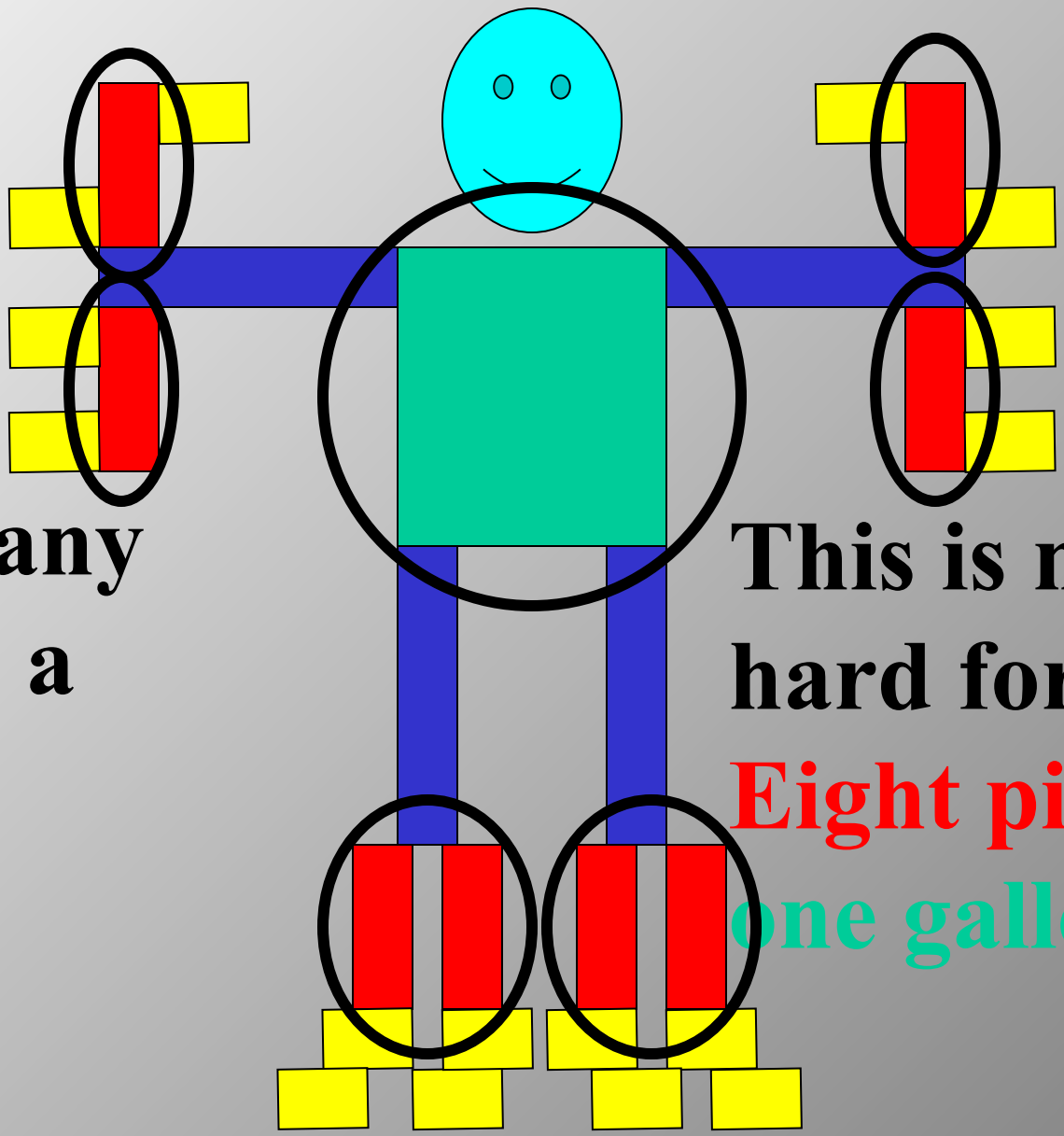
How many quarts in a gallon?

Right!
Four quarts = one gallon!

How many pints in a quart?

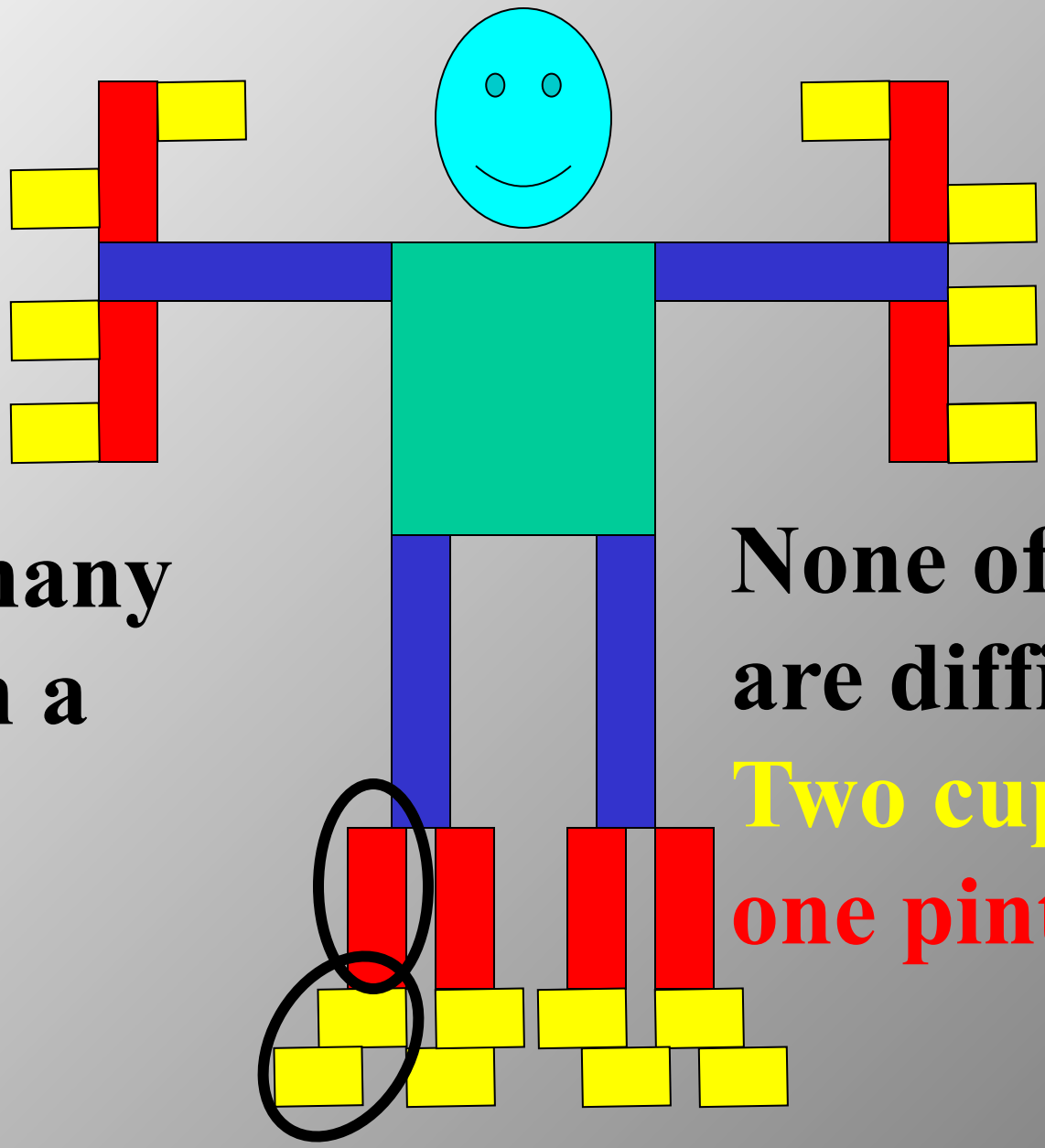


Right again !
Two pints
= one quart.



How many pints in a gallon?

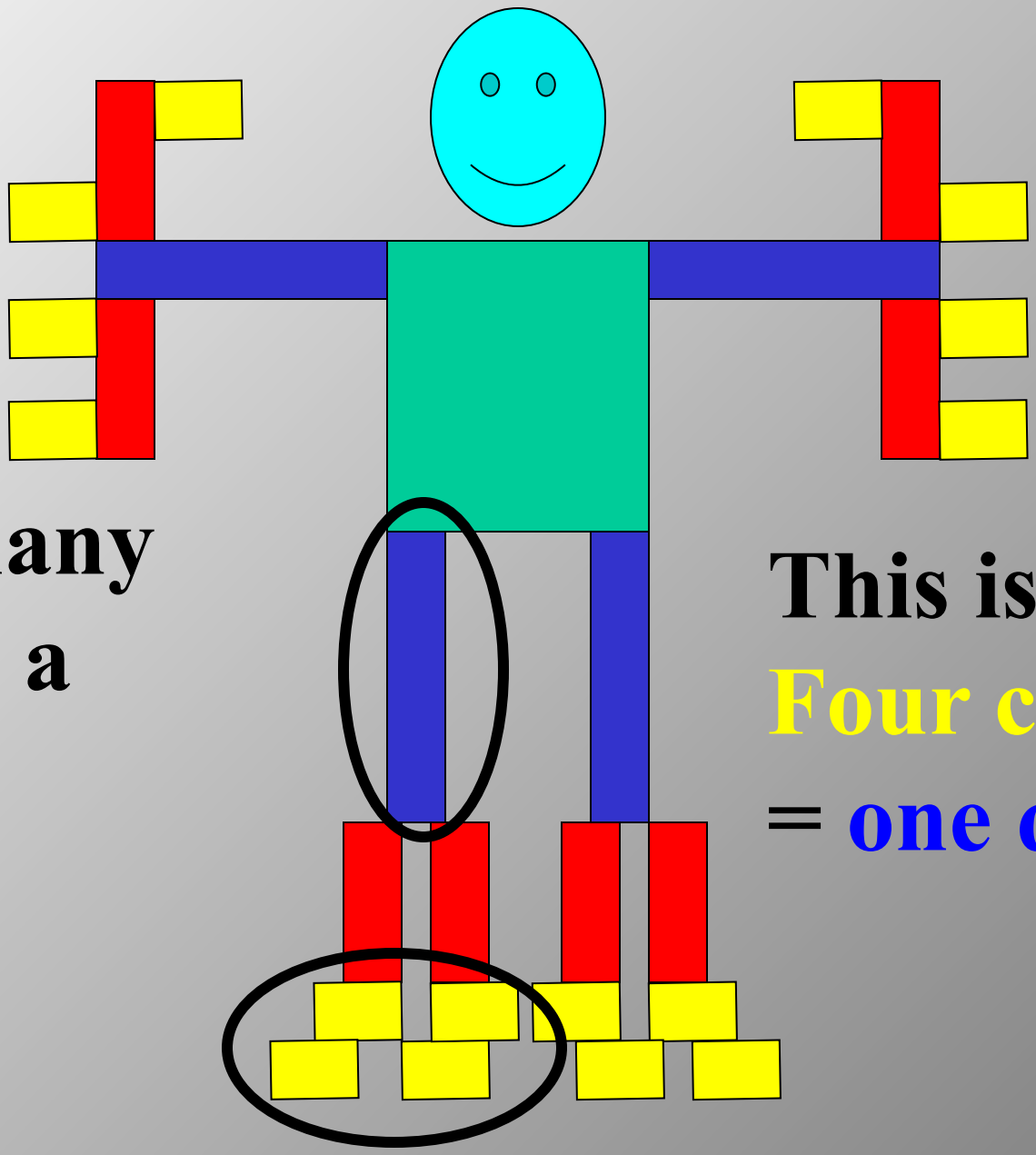
This is not even hard for you! Eight pints = one gallon.



How many cups in a pint?

None of these are difficult.

Two cups = one pint

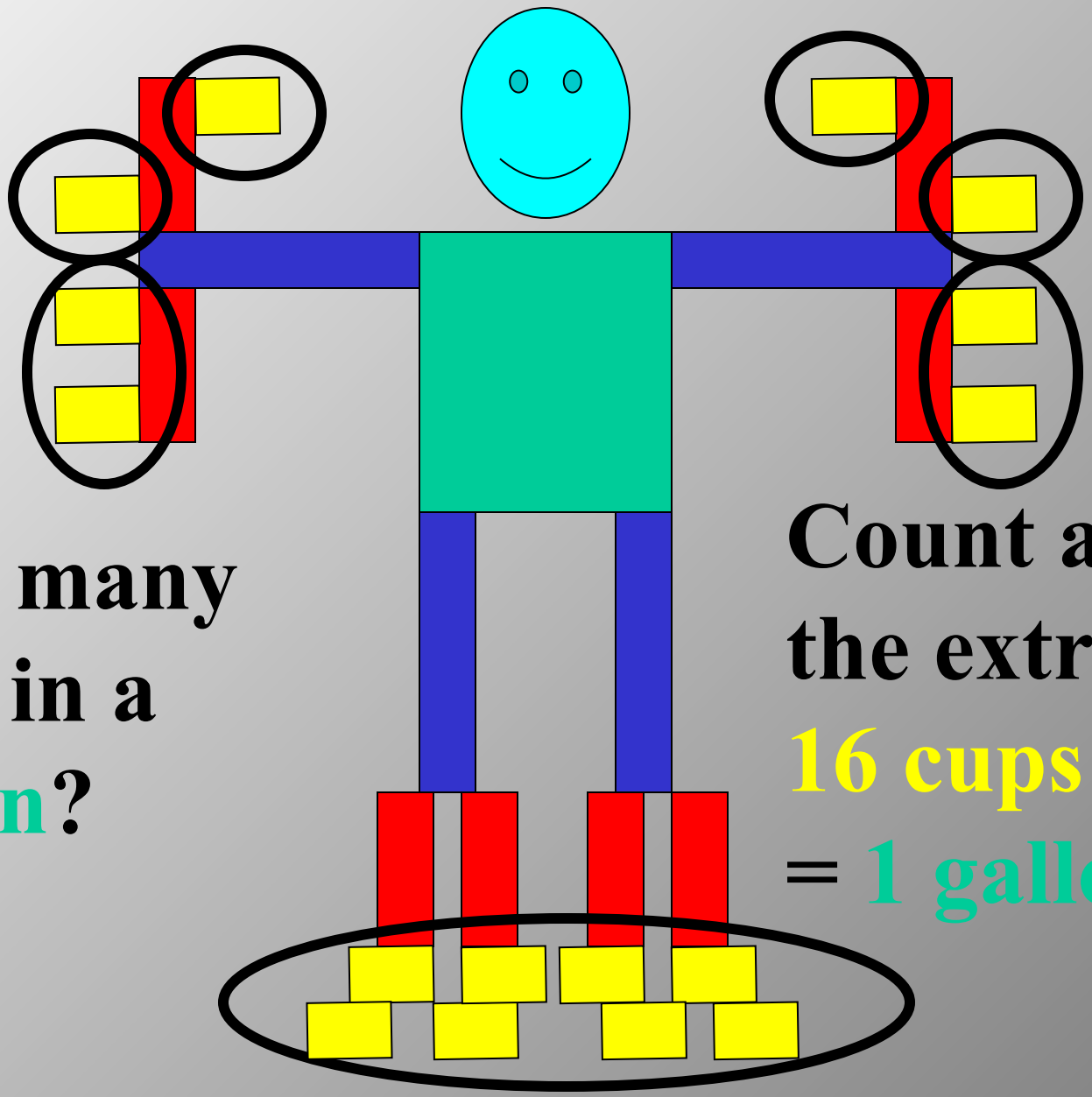


How many cups in a quart?

This is easy!

Four cups

= one quart

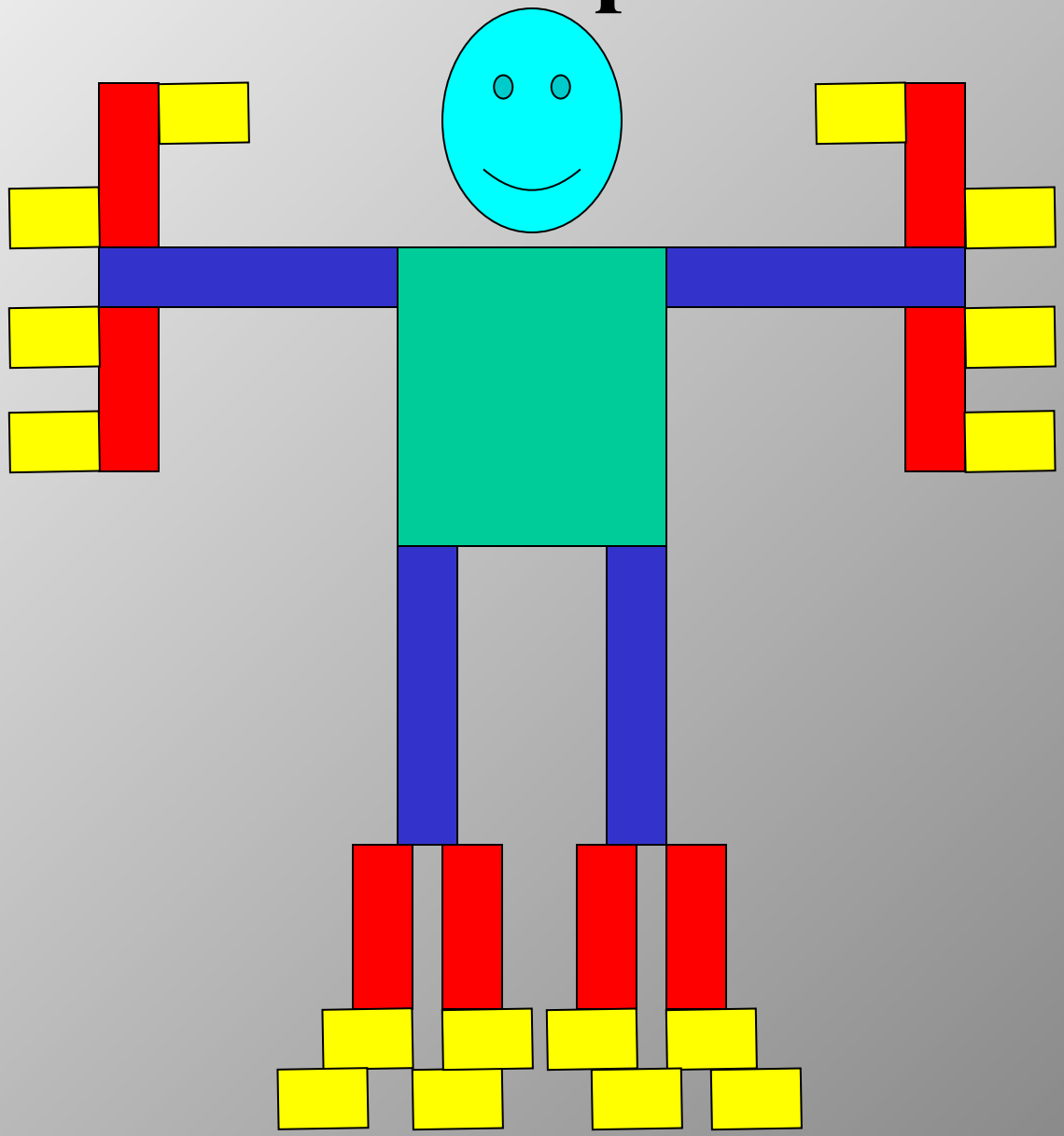


How many cups in a gallon?

Count all of the extremes.

16 cups = 1 gallon

Gallon Man can help us some more.



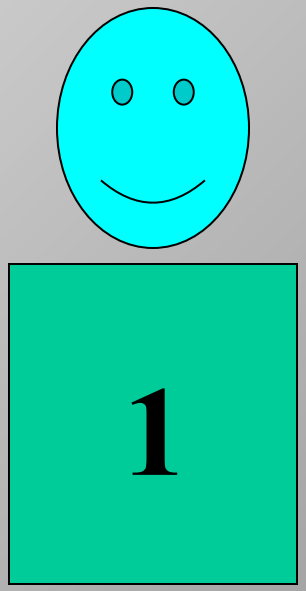
You know the Gallon Man along with all of his parts: quarts, pints, and cups.

Let' draw another gallon man and label his parts using fractions.

This turns Gallon Man into…

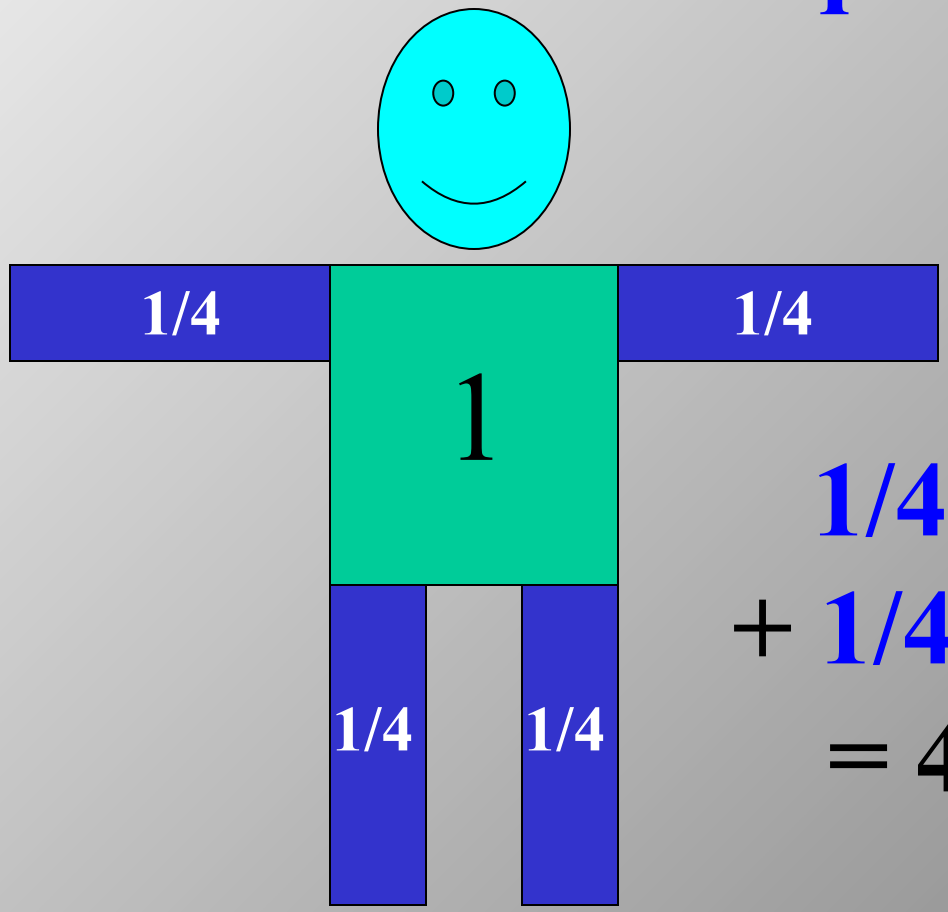
Fraction Friend!

We built “Fraction Friend” exactly the way we built “Gallon Man.”



One gallon = One whole

“Fraction Friend” and quarters

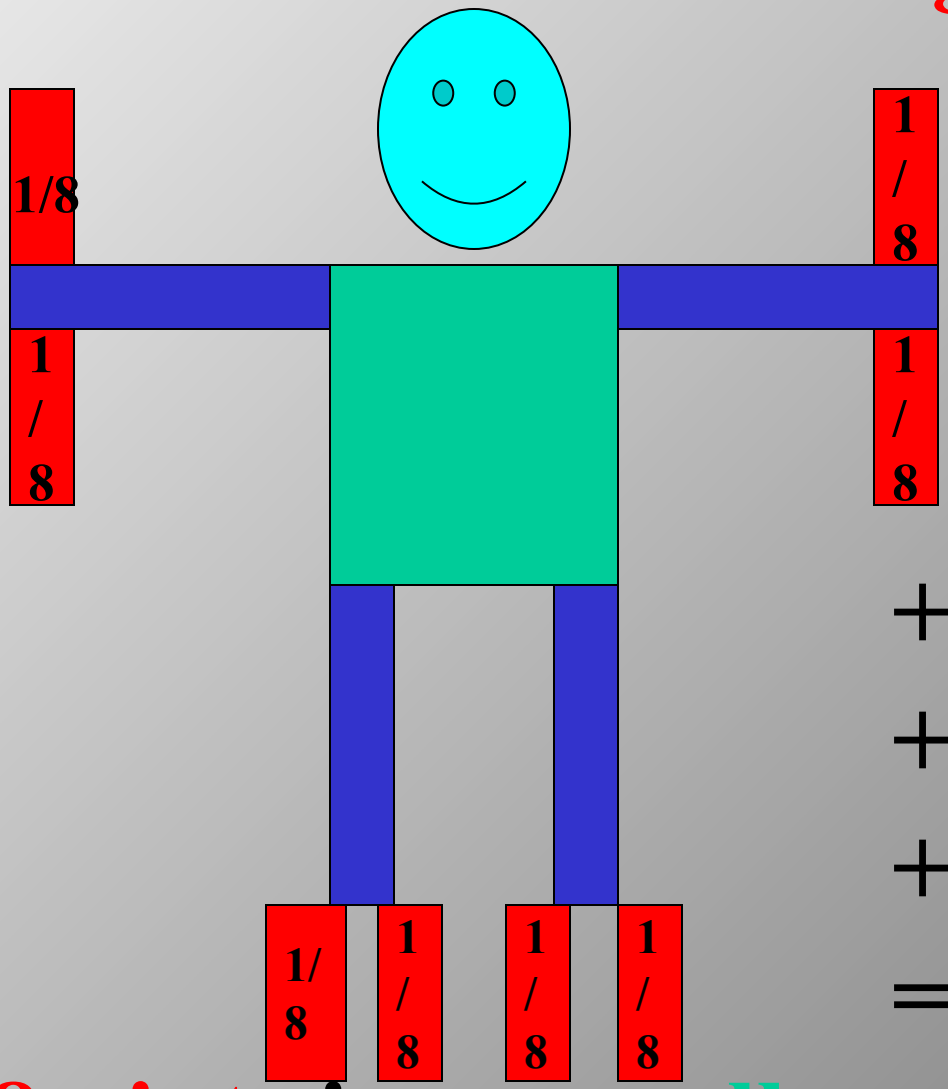


$$1/4 + 1/4 + 1/4 + 1/4 = 4/4 = 1.$$

One gallon = 1 whole

There are 4 quarts in one gallon, so each quart is 1of 4 parts, or 1/4 of a gallon .

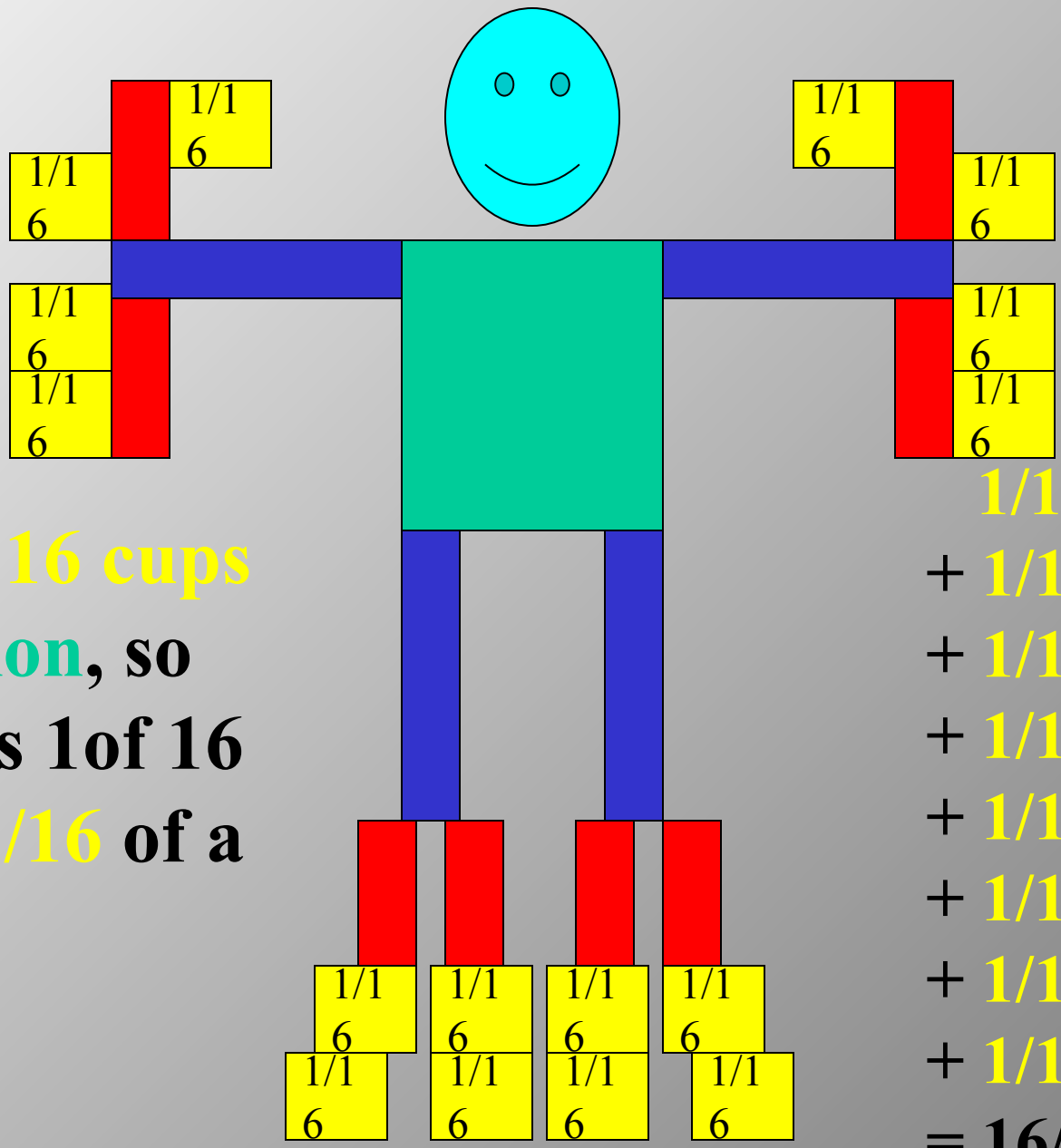
“Fraction Friend” and eights



1/8 + 1/8
+ 1/8 + 1/8
+ 1/8 + 1/8
+ 1/8 + 1/8
= 8/8 = 1.

There are 8 pints in one gallon, so each pint is 1of 8 parts, or 1/8 of a gallon .

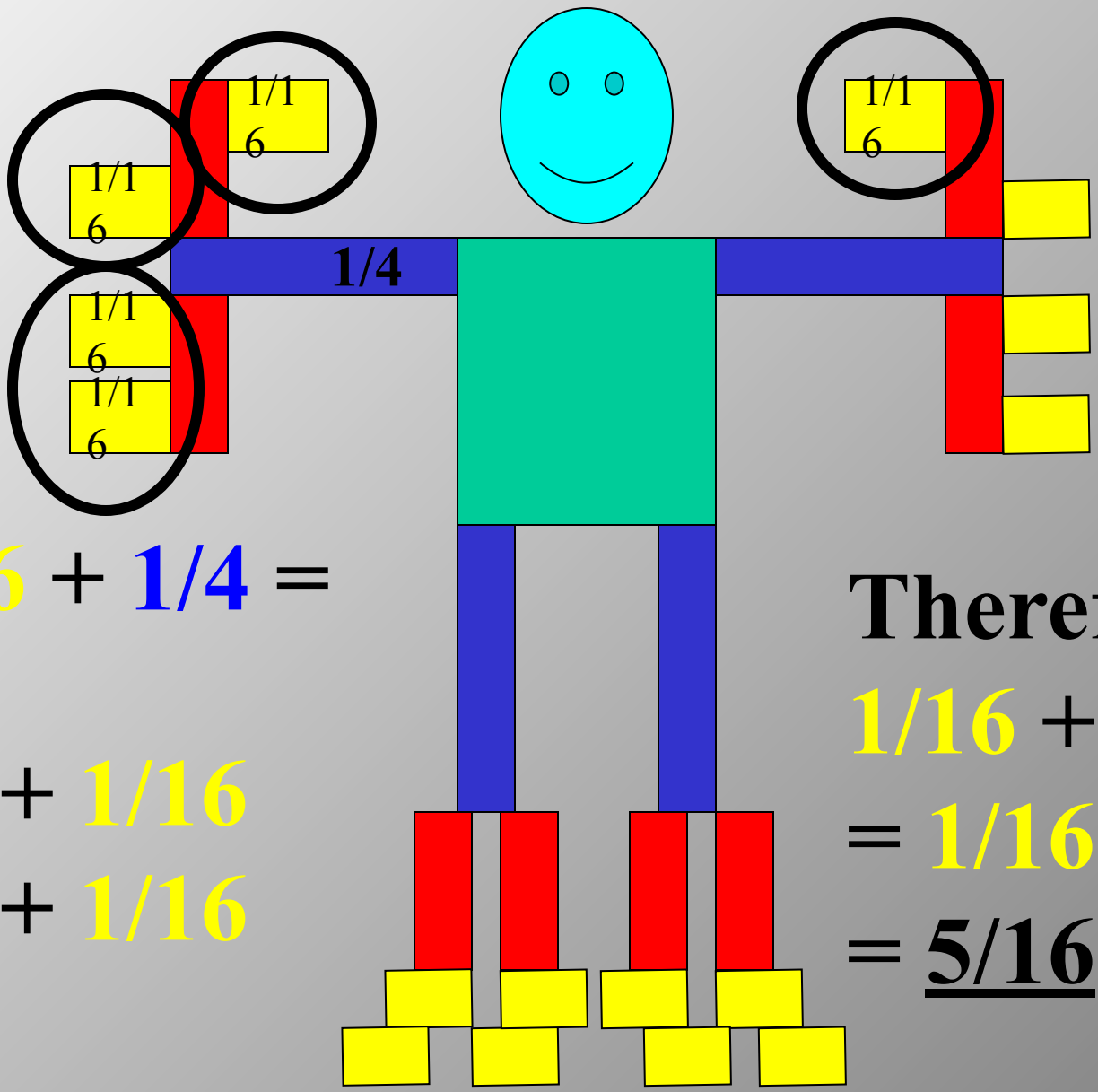
“Fraction Friend” and sixteenths



There are 16 cups in one gallon, so each cup is 1of 16 parts, or 1/16 of a gallon .

1/16 + 1/16 + 1/16 + 1/16 + 1/16 + 1/16 + 1/16 + 1/16 + 1/16 + 1/16 + 1/16 + 1/16 + 1/16 + 1/16 + 1/16 + 1/16 = 16/16 = 1.

Let's do this one.



1/16 + 1/4 = 1/4

= 1/16 + 1/16 + 1/16 + 1/16

= 4/16

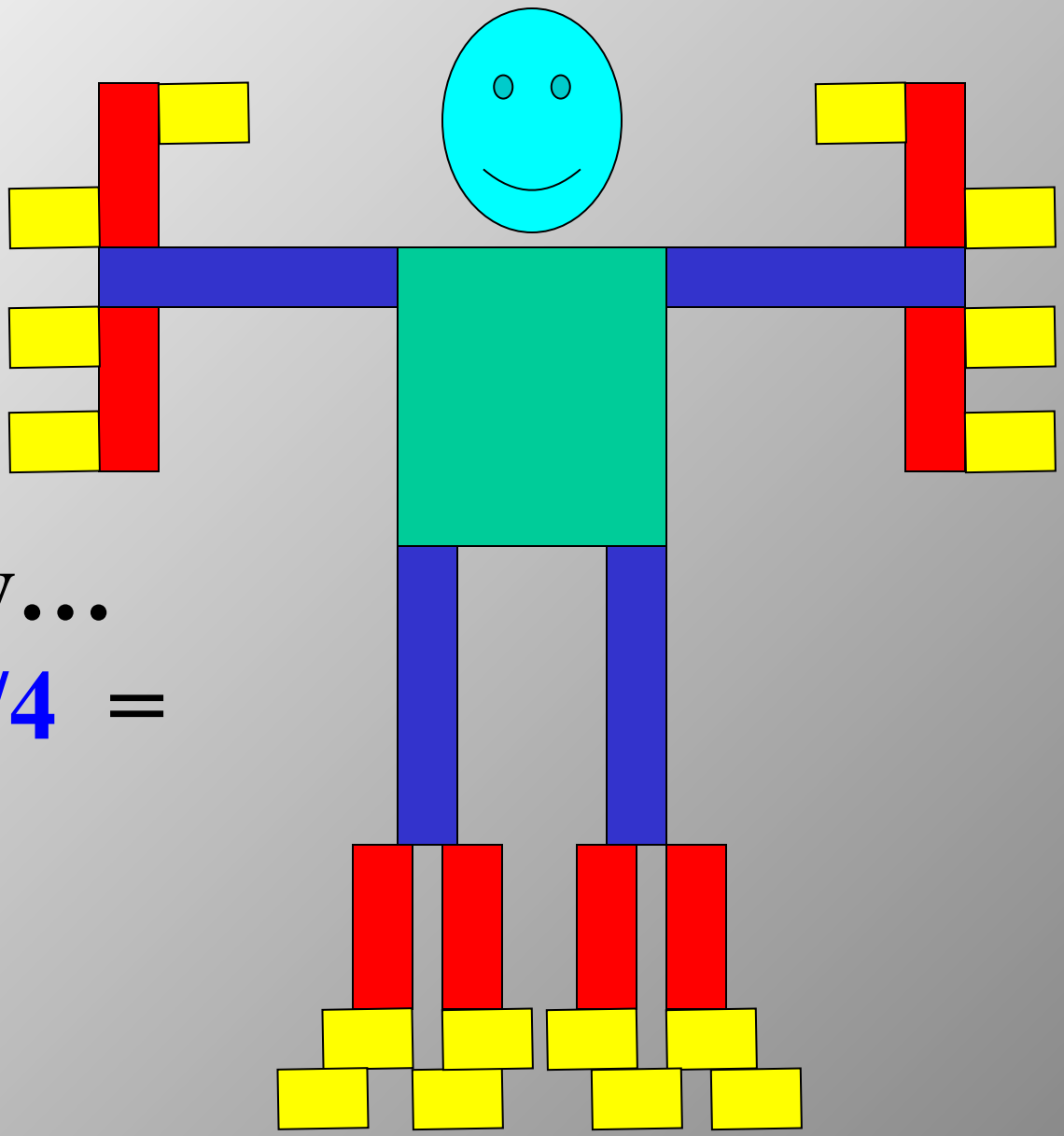
Therefore,

1/16 + 1/4

= 1/16 + 4/16

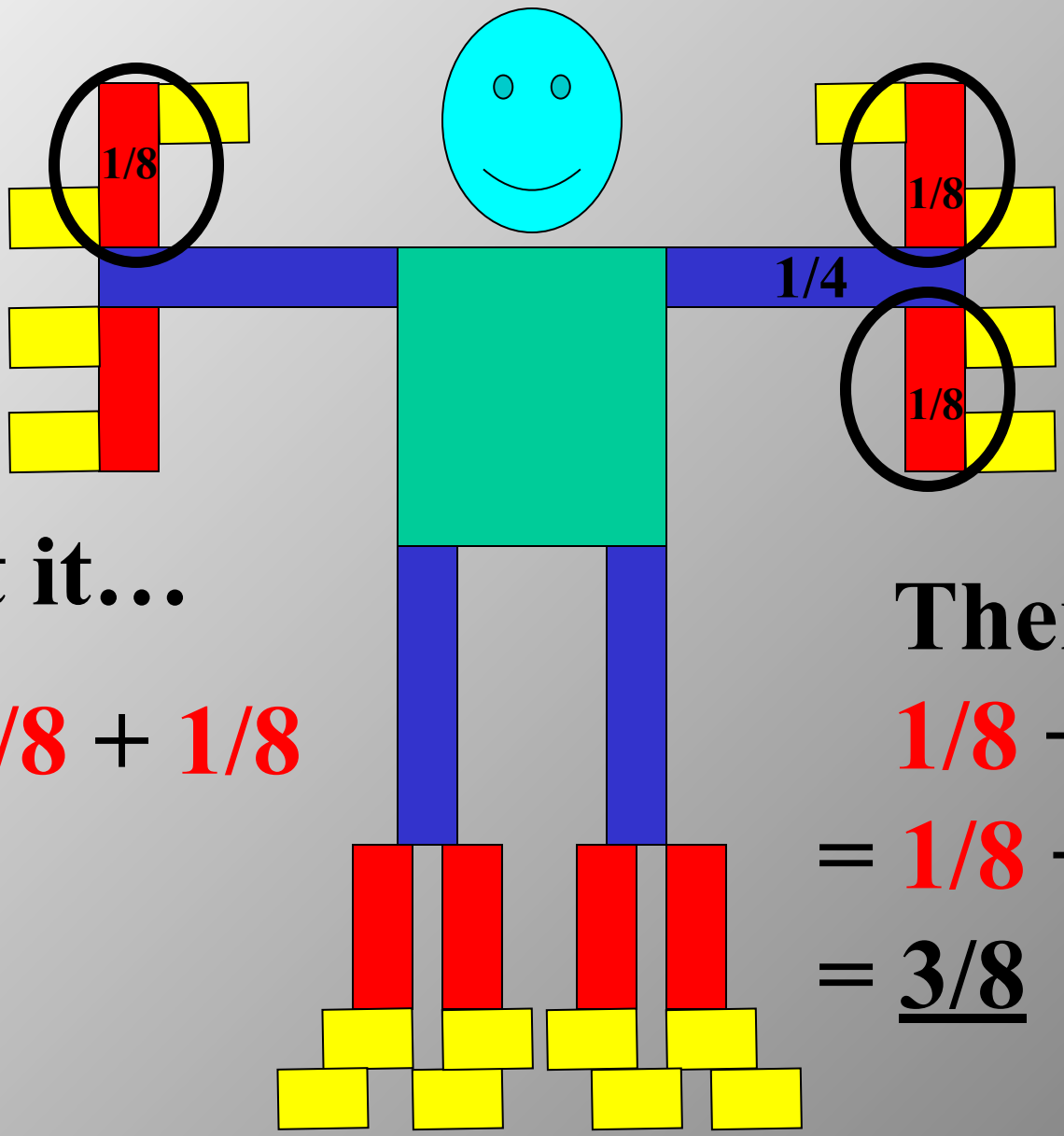
= 5/16

Here's another one.



You try…

1/8 + 1/4 =



You got it…

$1/4 = 1/8 + 1/8$

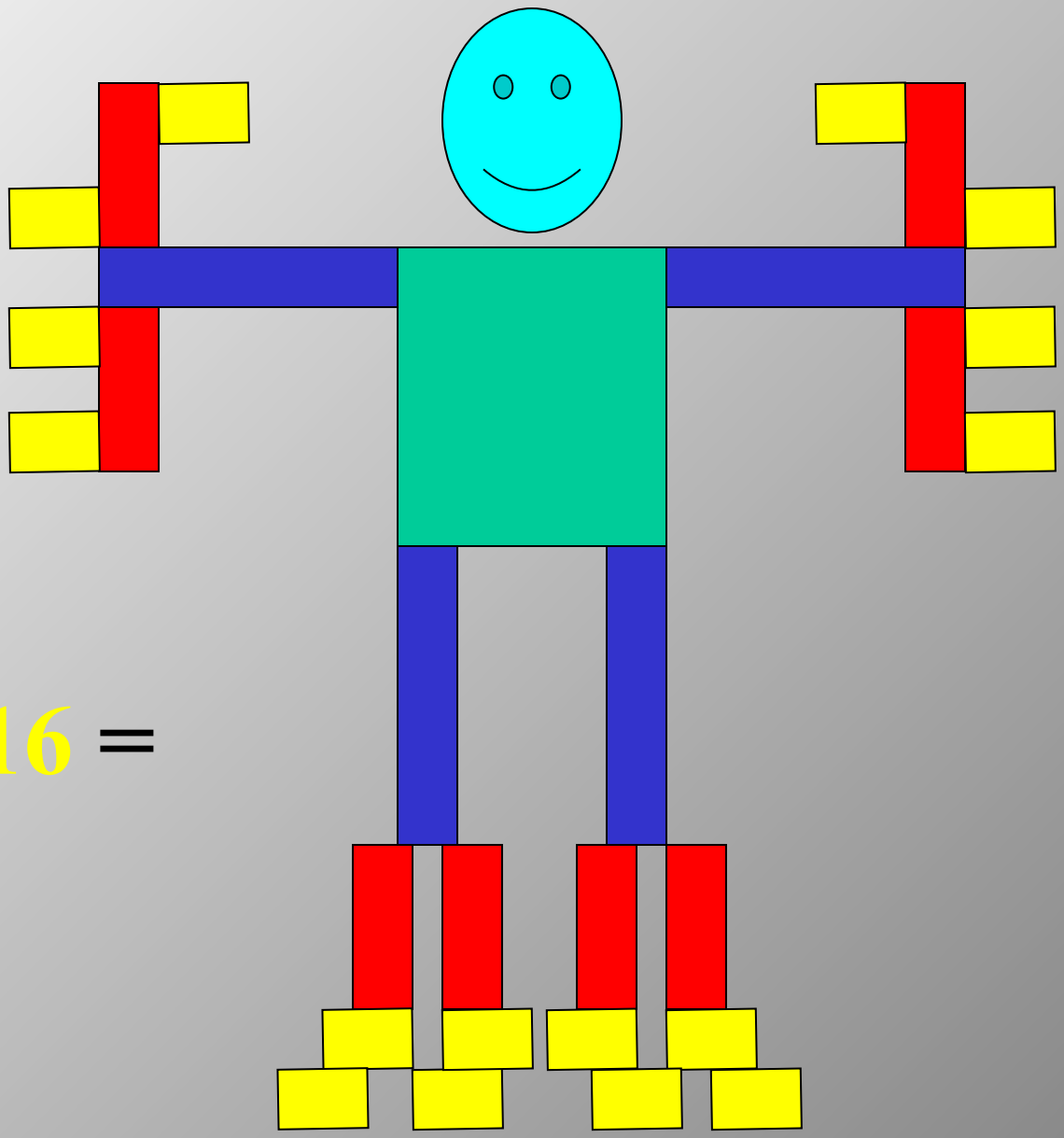
$= 2/8$

Therefore,

$1/8 + 1/4$

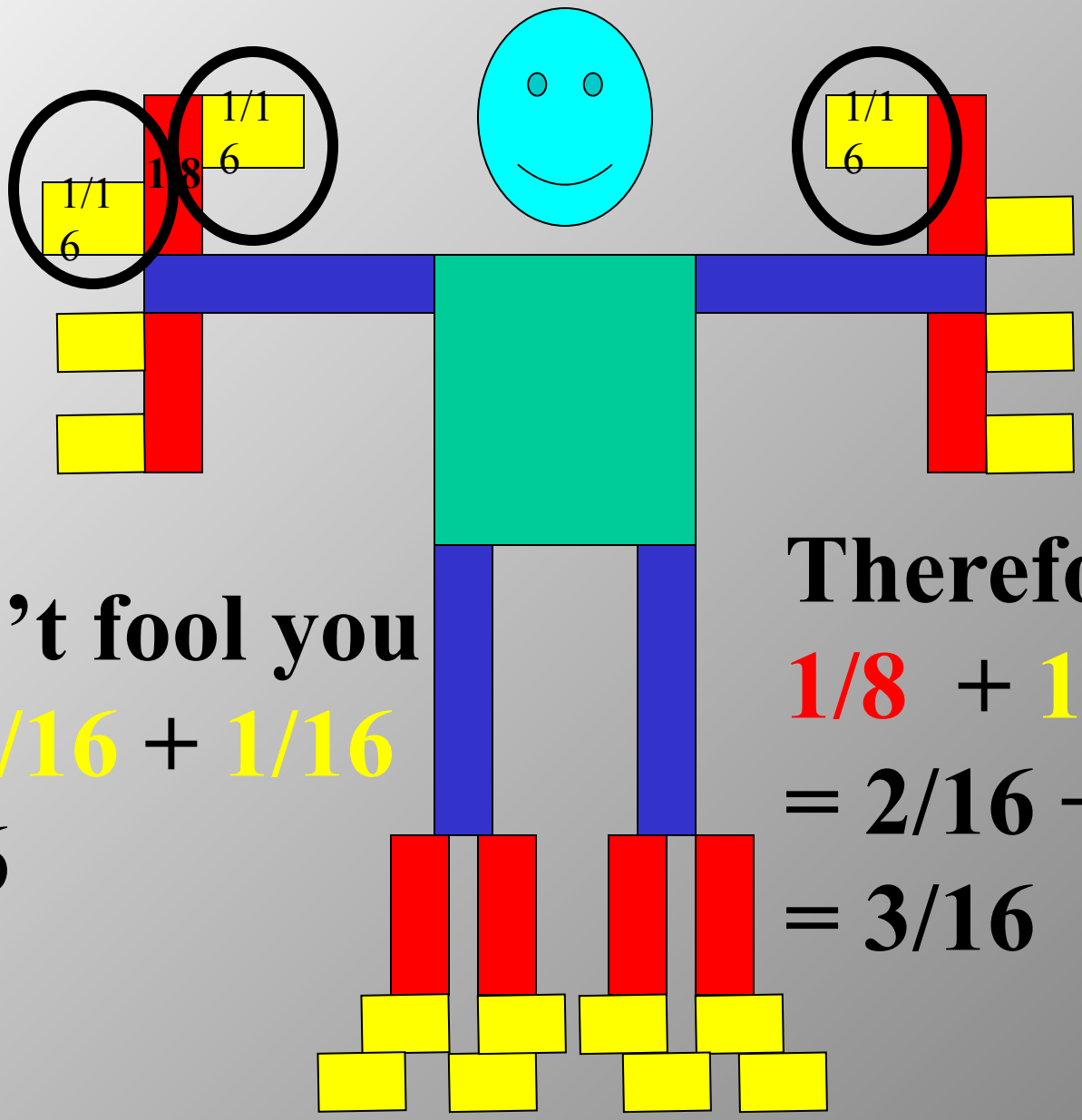
$= 1/8 + 2/8$

$= \underline{3/8}$



And…

1/8 + 1/16 =



Couldn't fool you

1/8 = 1/16 + 1/16

=2/16

Therefore,

1/8 + 1/16

= 2/16 + 1/16

= 3/16

The Gallon Man helps us remember: quarts, pints and cups.

Fraction Friend helps us with: quarters, eights and sixteenths.

Now let's see if we can apply what we have learned from Fraction Friend to fractions with other denominations .