

Let me make sure I understand...

Each part is $\frac{1}{7}$ of 28.

So, $\frac{1}{7}$ of 28 is 4.

...to find $\frac{1}{7}$ of 28, we split 28 into 7 equal parts.

Uh huh.

Doesn't that mean finding $\frac{1}{7}$ of 28 is the same as dividing 28 by 7?

Yep.

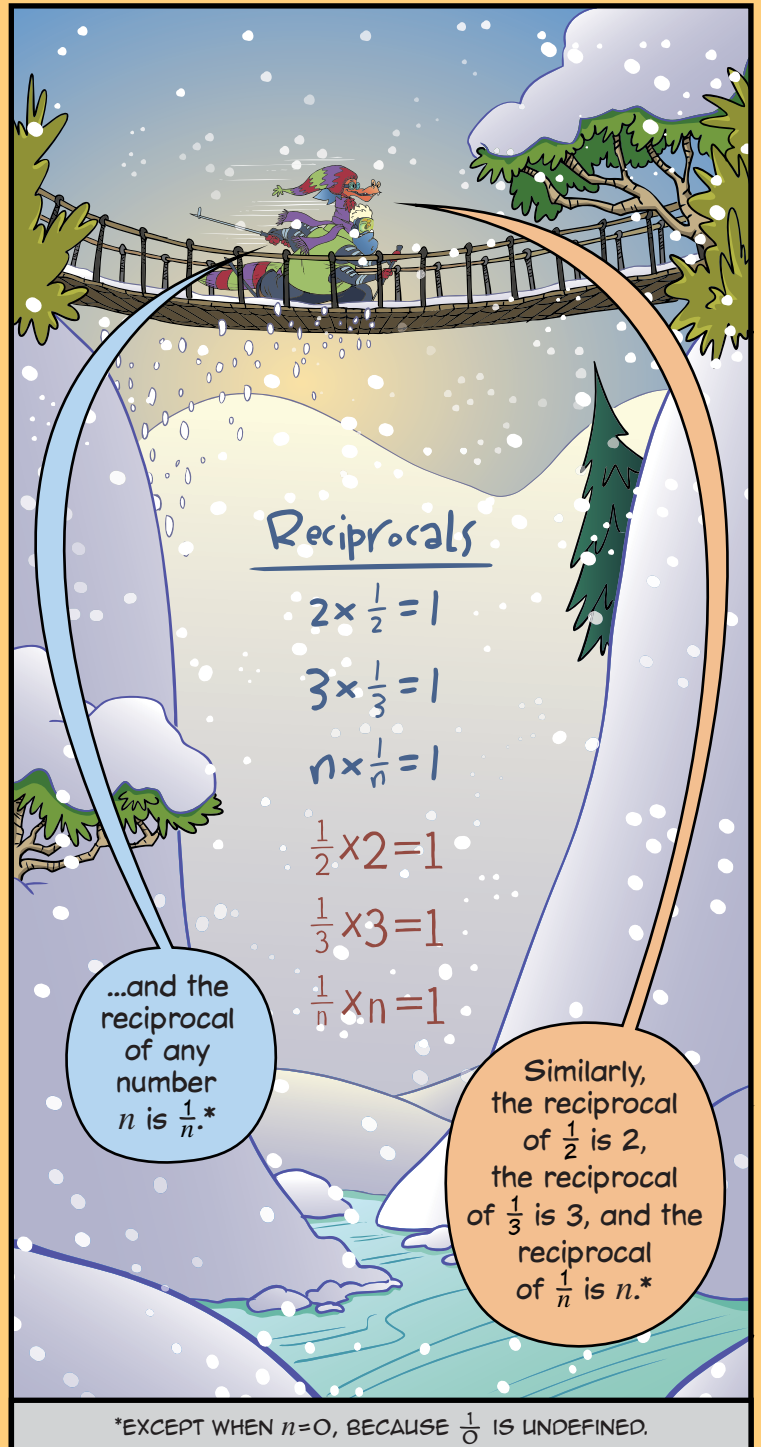
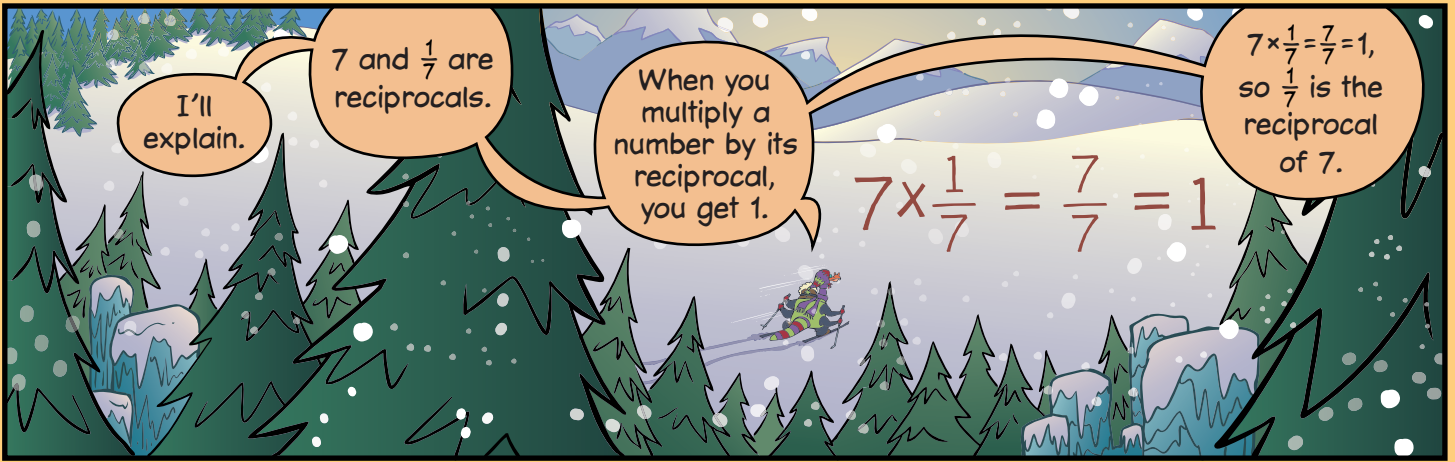
So, dividing by 7 is the same as multiplying by $\frac{1}{7}$?

That's right.

$$21 \div 7 = 21 \times \frac{1}{7}$$

To divide by a number, we can multiply by its *reciprocal*.

Reciprocal?





So, you said that to divide by a number, we can multiply by its reciprocal.

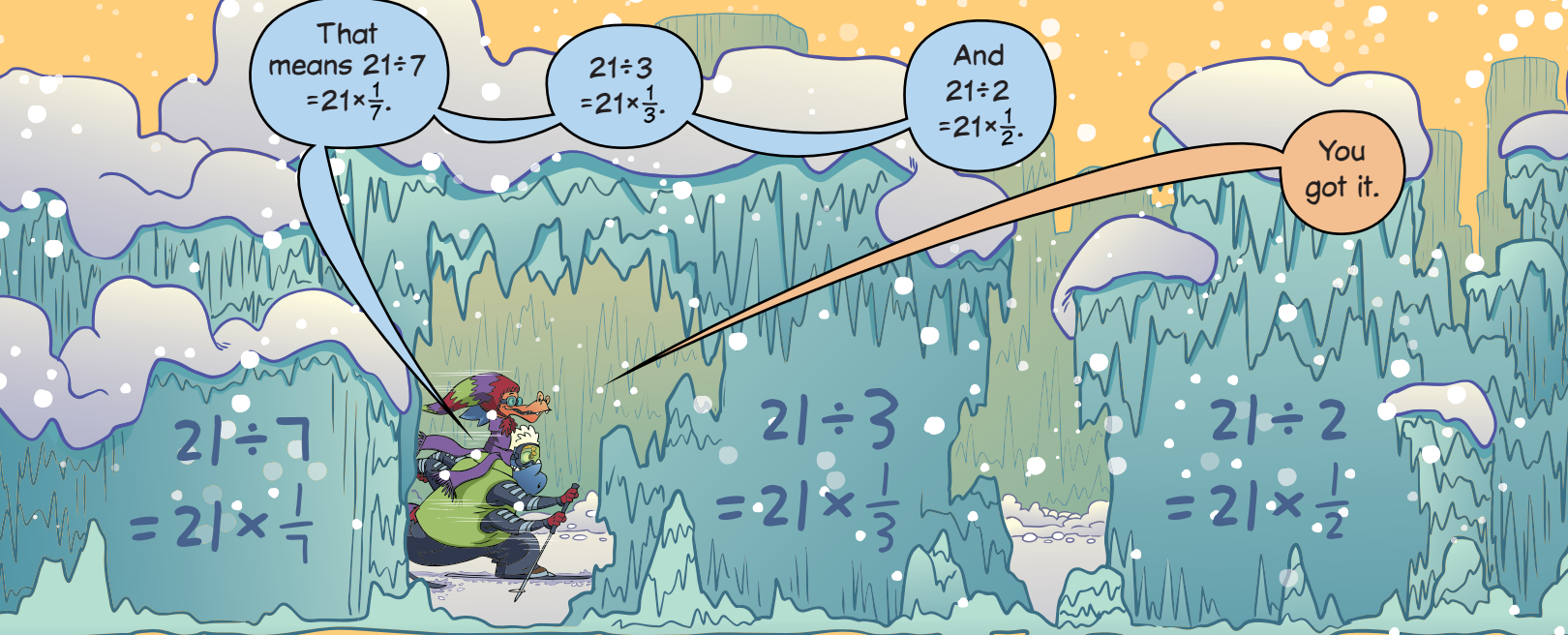
Yep.

That means $21 \div 7 = 21 \times \frac{1}{7}$.

$21 \div 3 = 21 \times \frac{1}{3}$.

And $21 \div 2 = 21 \times \frac{1}{2}$.

You got it.



$$21 \div 7 = 21 \times \frac{1}{7}$$

$$21 \div 3 = 21 \times \frac{1}{3}$$

$$21 \div 2 = 21 \times \frac{1}{2}$$

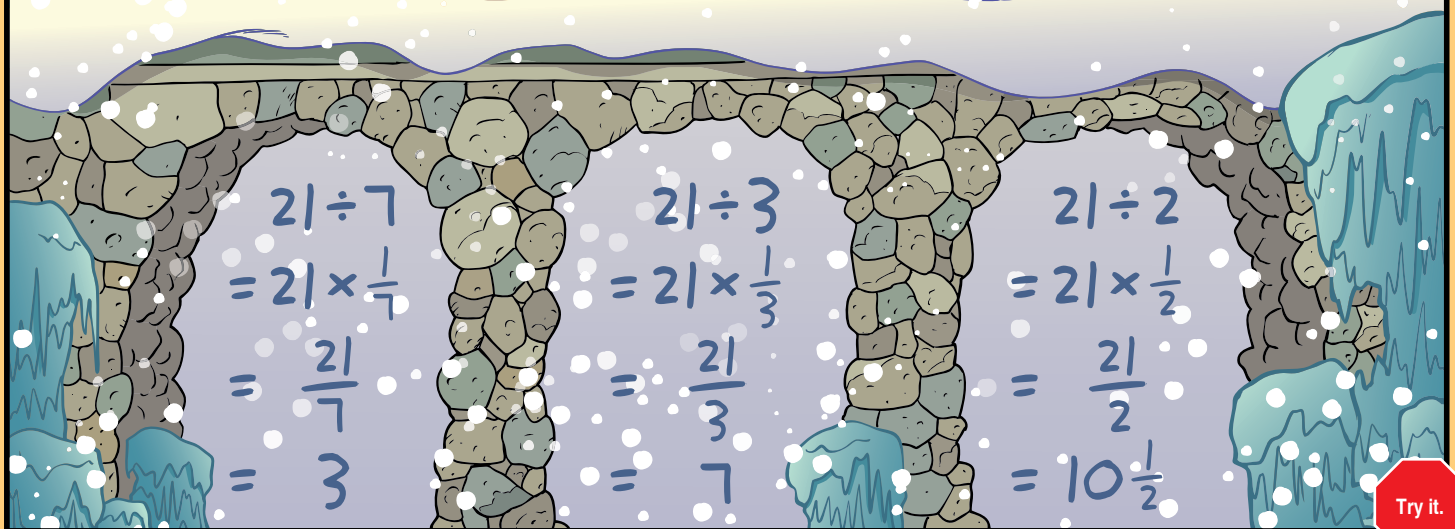


Hmmm...

That's not very useful.

I already knew how to divide 21 by 7.

Sure, but can you divide 21 by $\frac{1}{3}$?



$$\begin{aligned} 21 \div 7 &= 21 \times \frac{1}{7} \\ &= \frac{21}{7} \\ &= 3 \end{aligned}$$

$$\begin{aligned} 21 \div 3 &= 21 \times \frac{1}{3} \\ &= \frac{21}{3} \\ &= 7 \end{aligned}$$

$$\begin{aligned} 21 \div 2 &= 21 \times \frac{1}{2} \\ &= \frac{21}{2} \\ &= 10\frac{1}{2} \end{aligned}$$

Try it.



Let's see...
To divide, we
multiply by the
reciprocal.

So,
to compute
 $21 \div \frac{1}{3}$,
we multiply
 21×3 !

$$21 \div \frac{1}{3} \\ = 21 \times 3 \\ = 63!$$

$$21 \div \frac{1}{3} \\ = 21 \times 3 \\ = 63$$



Exactly.

Why
does *that*
work?



I never
really thought
about it.

Let's start
with a problem
we know how to
solve.

What does it
even mean to
divide 21 by $\frac{1}{3}$?

What does it
mean to divide
45 by 9?

$45 \div 9$ is
the number of
9-pound snowballs
you can make with
45 pounds of
snow.

It takes
five 9's
to equal 45,
so $45 \div 9 = 5$.

In other
words, since
 $5 \times 9 = 45$,
 $45 \div 9 = 5$.

Right.
So, how does
that work
for $21 \div \frac{1}{3}$?

