

# September 18, 2014

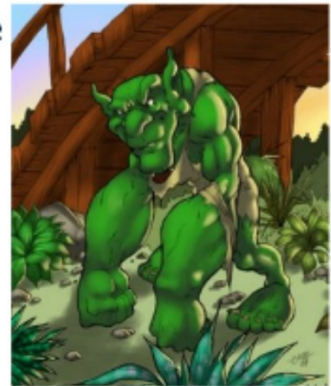
## Starter

You are on your way to visit your Grandma, who lives at the end of the valley. It's her birthday, and you want to give her the cakes you've made.

Between your house and her house, you have to cross 7 bridges, and as it goes in the land of make believe, there is a troll under every bridge!

Each troll, quite rightly, insists that you pay a troll toll. Before you can cross their bridge, you have to give them half of the cakes you are carrying, but as they are kind trolls, they each give you back a single cake.

How many cakes do you have to leave home with to make sure that you arrive at Grandma's with exactly 2 cakes?



## 9/18 - Multiplying Integers: more complicated problems

**Review:**



$$+ \cdot + = +$$

$$+ \cdot - = -$$

$$- \cdot + = -$$

$$- \cdot - = +$$

**QUICK WRITE:**

Explain "Batman rules" in your own words for the next 2 minutes.

How do you handle a problem with more than 2 integers multiplied together?

$$\begin{aligned} & \underline{(-7)}(4)\underline{(3)} \\ & = -21 \cdot 4 \\ & = -84 \end{aligned}$$

$$\begin{aligned} & \underline{8 \cdot -10} \cdot -3 \\ & = -80 \cdot -3 \\ & = 240 \end{aligned}$$

$$\begin{aligned} & \underline{-2 \cdot -6} \cdot \underline{4 \cdot 10} \\ & = 12 \cdot 40 \\ & = 480 \end{aligned}$$

$$\begin{aligned} & \underline{(-4)(-5)} \underline{(-1)(-6)} \\ & = 20 \cdot 6 \\ & = 120 \end{aligned}$$

What are "exponents"?

$$3^2 \quad \begin{array}{c} \leftarrow \text{Exponent} \\ \leftarrow \text{Base} \rightarrow \end{array} \quad 2^3$$

What does the exponent tell you?

How many times you multiply the base together

$$\begin{aligned} 3^2 &= 3 \cdot 3 \\ &= 9 \end{aligned}$$

$$\begin{aligned} 2^3 &= 2 \cdot 2 \cdot 2 \\ &= 8 \end{aligned}$$

Compute - watch the signs carefully!

$$(-2)^3 = (-2)(-2)(-2) = -8$$

$$5^2 = 5 \cdot 5 = 25$$

$$-5^2 = -5 \cdot 5 = -25$$

$$(-5)^2 = -5 \cdot -5 = 25$$

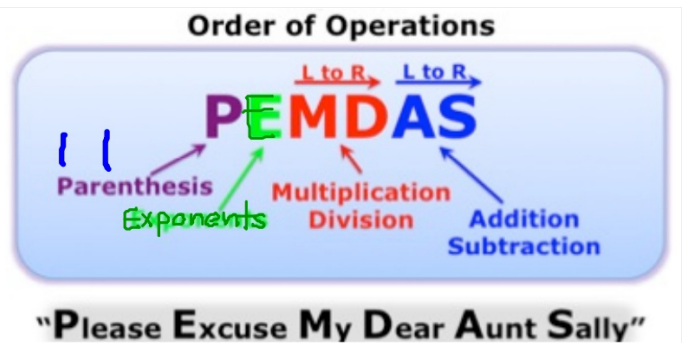
$$\begin{aligned}(-3)^4 &= -3 \cdot -3 \cdot -3 \cdot -3 \\ &= 9 \cdot 9 = 81\end{aligned}$$

$$\begin{aligned}-3^4 &= -3 \cdot 3 \cdot 3 \cdot 3 \\ &= -81\end{aligned}$$

$$-4^2 = -4 \cdot 4 = -16$$

$$(-4)^2 = -4 \cdot -4 = 16$$

In problems with multiple operations, don't forget to use the **order of operations!**



$$|-2^3|$$

$$= |-8|$$

$$= 8$$

$$6^2 \cdot |2 \cdot -5|$$

$$= 36 \cdot |-10|$$

$$= 36 \cdot 10$$

$$= 360$$

$$-3 \cdot -3^2(-1)$$

$$= -3 \cdot -9 \cdot (-1)$$

$$= 27 \cdot (-1)$$

$$= -27$$

**Homework**

**Gold - WS6**

**Due today**