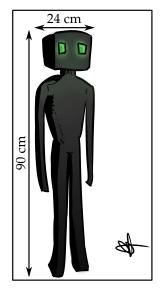


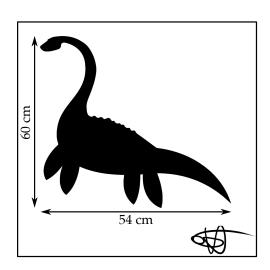
Problem of the Week Problem B and Solution It's All Relative

Problem

Jacob has a picture on his wall of an enderman MinecraftTM character and another of the Loch Ness Monster. The dimensions of each are shown below. He wants to make a smaller scale drawing of each of them. Jacob uses a scale of 1:6 to draw his enderman. He uses a different scale to draw the Loch Ness Monster so that it is twice as tall as his drawing of the enderman.

- a) How tall is Jacob's drawing of the enderman?
- b) What scale did Jacob use to draw the Loch Ness Monster?
- c) How wide is Jacob's drawing of the Loch Ness Monster?





Solution

- a) The original picture of the enderman is 90 cm tall, and Jacob is using a scale of 1:6 to make his smaller drawing. Thus, Jacob's drawing is $90 \div 6 = 15$ cm tall.
- b) Since Jacob's drawing of the Loch Ness Monster is twice as tall as his drawing of the enderman, that tells us his drawing of the Loch Ness Monster is $2 \times 15 = 30$ cm tall. The original picture of the Loch Ness Monster is 60 cm tall. So the scale is 30:60, which is equivalent to 1:2.
- c) The original picture of the Loch Ness Monster is 54 cm wide, and Jacob is using a scale of 1 : 2 to make his smaller drawing. Thus, Jacob's drawing is $54 \div 2 = 27$ cm wide.