

What does one TRILLION rand look like?

(calculations & dimensions)

1) We are using R100 notes.

2) We are using the following definitions of million, billion and trillion...

MILLION	= 1,000,000
BILLION	= 1,000,000,000
TRILLION	= 1,000,000,000,000

I realize that some people in some places may have been taught differently and that there is the "short scale" and "long scale" definitions of these numbers. But without getting into the merits, preference or usage of one naming system over another, let's just be clear that the above is the system I'm using. And more importantly, when the South African government is talking about a trillion rands, that is the system they are using.

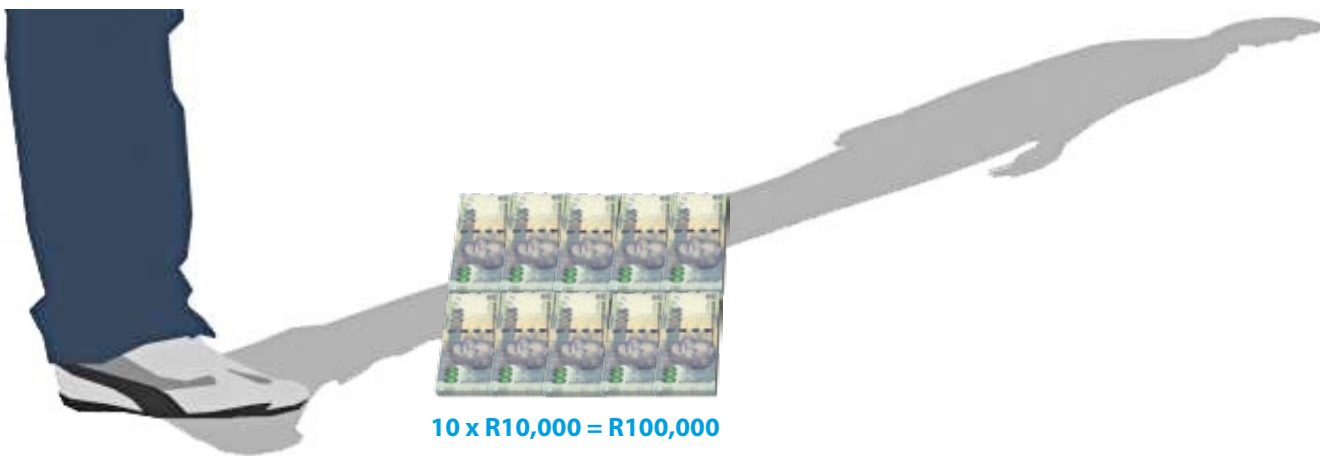
With that out of the way, let's get to our calculations.

We'll start with one packet...



$$100 \times R100 = R10,000$$

This packet is a stack of one hundred R100 notes.
It's about 6" by 2-1/2" by 0.43" high.



$$10 \times R10,000 = R100,000$$

If we increase it to 10 layers high, we get R1,000,000 (one million rands)...



$$10 \times R100,000 = R1,000,000$$

The pile is 12" wide (2 x 6"), 12.5" deep (5 x 2.5") and 4.3" high (10 x .43").

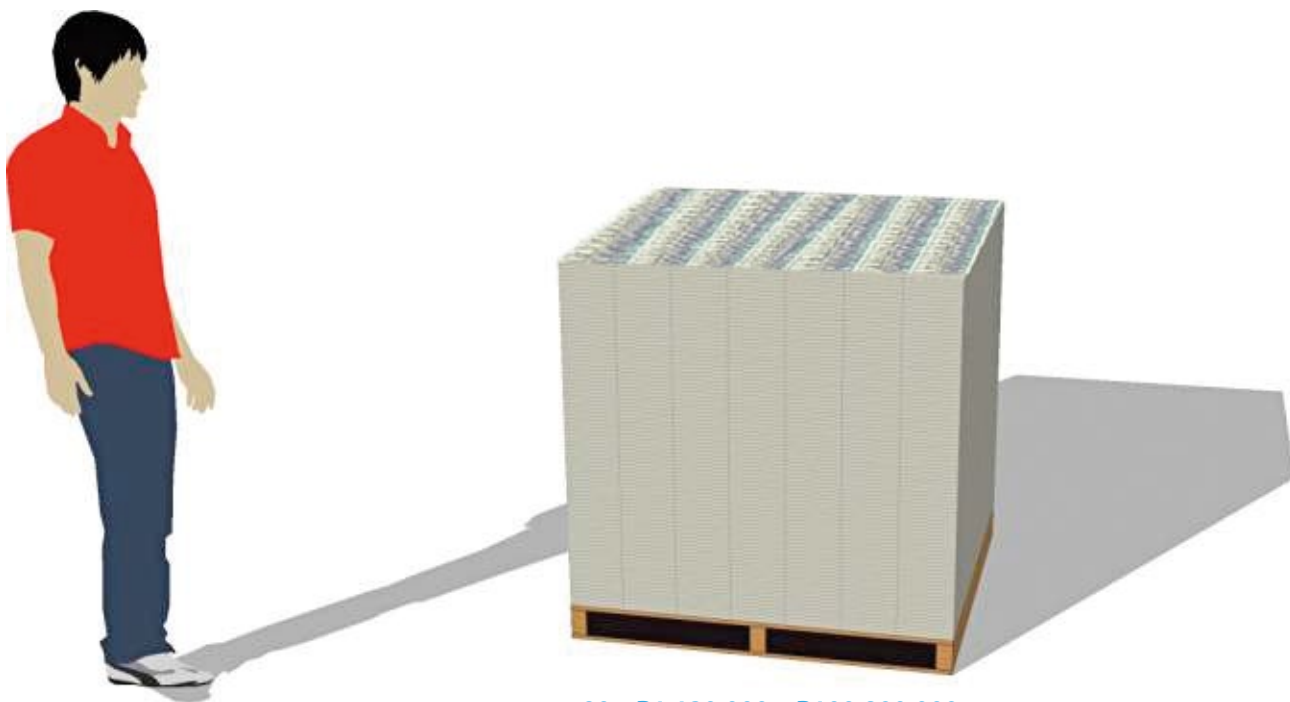
Now we'll look at a pallet. We'll start with one layer, 7 packets wide by 16 packets deep, with each packet being R10,000.



$7 \times 16 = 112$ packets per layer

$112 \times R10,000 = R1,120,000$ per layer

Increase that to 90 layers and you have a stack 38.7" tall (plus 4" for the pallet) that is worth a little over R100,000,000 (one hundred million rand)



$90 \times R1,120,000 = R100,800,000$

For the sake of simplicity, we'll round this down and consider a pallet to be exactly R100,000,000 (one hundred million rand). We'll just put the extra R800,000 aside and have ourselves a party. With all this money sloshing around, who's gonna miss it?

Next, ten pallets of R100 million are R1 billion...



$10 \times R100,000,000 = R1,000,000,000$ (one billion rand)

Here is where we may start running into problems. In some parts of the world, this may be referred to as a "thousand million" (or "milliard") rather than a billion.

Below is a table showing the different terminology. Which one you use may depend on where you live. More on this at Wikipedia if you're interested.

Short Scale

one
thousand
million
billion
trillion
quadrillion
quintillion
sextillion

Long Scale

one
thousand
million
thousand million (or milliard)
billion
thousand billion (or billiard)
trillion
thousand trillion (or trilliard)

1
1,000
1,000,000
1,000,000,000
1,000,000,000,000
1,000,000,000,000,000
1,000,000,000,000,000,000
1,000,000,000,000,000,000,000

At any rate, for our purposes here, we're at one billion rand (R1,000,000,000).

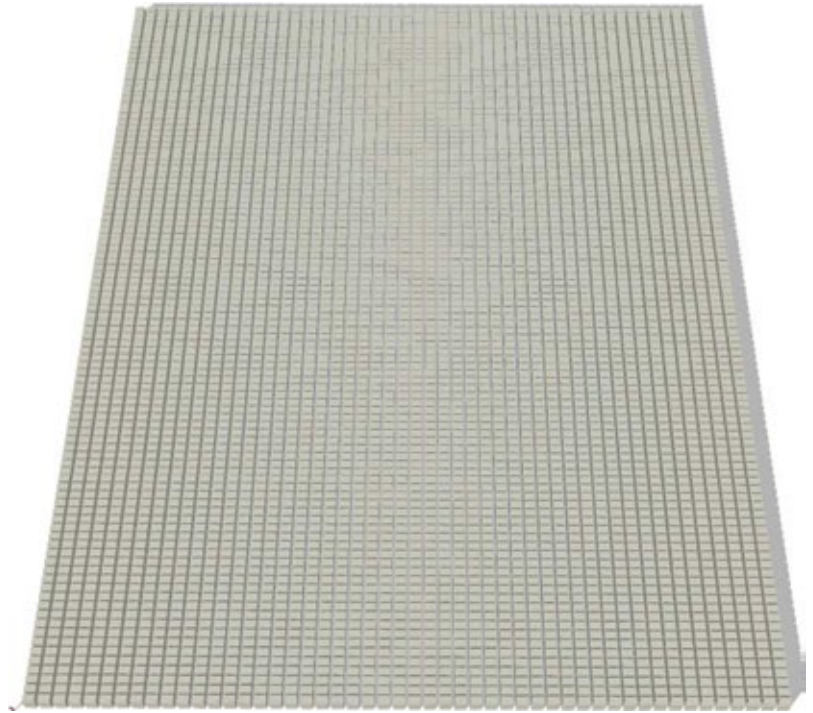
Next, a row of 50 double-stacked pallets (50 x 2 = 100 pallets total).



$100 \times R100,000,000/\text{pallet} = R10,000,000,000$ (ten billion rand)

Multiply that by 100 rows....

(Notice the little guy at the bottom left corner.)



100 rows x \$10,000,000,000 = \$1,000,000,000,000 (one trillion rand)

Here's another view oriented a little more to the front...

So, one hundred rows x 100 pallets per row is 10,000 pallets.

That's a LOT of R100 bills!

And hopefully that puts to rest any notions of "errors".

You know, it occurs to me.... if you were the guy stacking all those pallets and you swiped one single bill from the top of each pallet, after you were done you'd have yourself a cool 1 million rand.



Dimensions

Each individual pallet is 42" wide by 40" deep. The height of the bills is 38.7". Add 4" for a pallet and the total height of one pallet of bills is 42.7". In the field of pallets above, the pallets are spaced 12" apart.

The field is 50 pallets x 100 pallets by 2 pallets high, so...

$$\text{width} = (50 \times 42") + (49 \times 12") = 2100" + 588" = 2688" = 224 \text{ ft}$$

$$\text{depth} = (100 \times 40") + (99 \times 12") = 4000" + 1188" = 5188" = 432.33 \text{ ft}$$

$$\text{height} = 2 \times 42.7" = 85.4" = \text{just a little over 7ft high}$$

So our field of pallets is roughly 224ft x 432ft x 7ft high.

At 96,768 square feet, it's about 2.2 acres and well over the size of a football field.