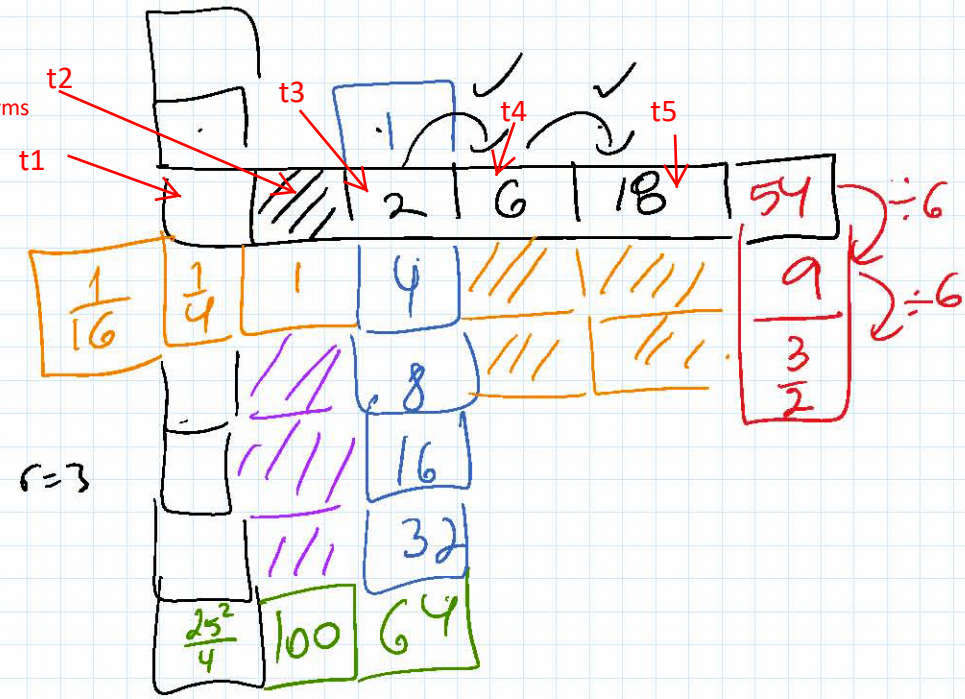
Ex. 26. / p45

see
www.academix.ca/math/allFormulas.html#Ratio2RandomTerms



square 3 and 5 are known:

$$\frac{t_5}{t_3} = \frac{18}{2} = r^{5-3}$$

$$9 = 3^2 = r^2 \Rightarrow r = 3$$

$$\frac{54}{9} = 6$$

$$\frac{9}{6} = \frac{\cancel{3}\cdot 3}{\cancel{3}\cdot 2} = \frac{3}{2}$$

$$\frac{t_4}{t_2} = \frac{4}{\frac{1}{4}} = r^{4-2}$$

$$4 \times \frac{4}{1} = r^2$$

$$(4)^2 = r^2$$

$$r = 4$$

$$r = \frac{64}{100} = \frac{\cancel{8}^{2}\cdot 8}{\cancel{2}_{1}\cdot \cancel{50}_{25}} = \frac{16}{25}$$

$$\frac{100}{\frac{16}{25}} = \cancel{100}^{25} \times \frac{25}{\cancel{16}_{4}} = \frac{25^2}{4}$$

$t_4 = \frac{1}{4}$; $t_8 = \frac{25^2}{4}$

$$\frac{\frac{25^2}{4}}{\frac{1}{4}} = r^{8-4} \iff 5^4 = r^4$$

$$\boxed{r = 5}$$

etc.