BAB 3: RUMUS ALGEBRA

MATEMATIK TINGKATAN 2

RUMUS ALGEBRA

ungkapkan a sebagai perkara rumus

$$a + 2b = c$$

$$a = c - 2b$$

letakkan a di hadapan, yang lain pindah belakang

$$3a - c = 5b$$

$$3a = 5b + c$$

$$a = \frac{5b + c}{3}$$

terbalikkan supaya a berada di hadapan

$$7c = a - 2b$$

$$a - 2b = 7c$$

$$a = 7c + 2b$$

terbalikkan supaya a berada di hadapan

$$-8b = 3a + 5c$$

$$3a + 5c = -8b$$

$$3a = -8b - 5c$$

$$a = \frac{-8b - 5c}{3}$$

kapur puteh

RUMUS ALGEBRA

ungkapkan a sebagai perkara rumus

tukar tempat

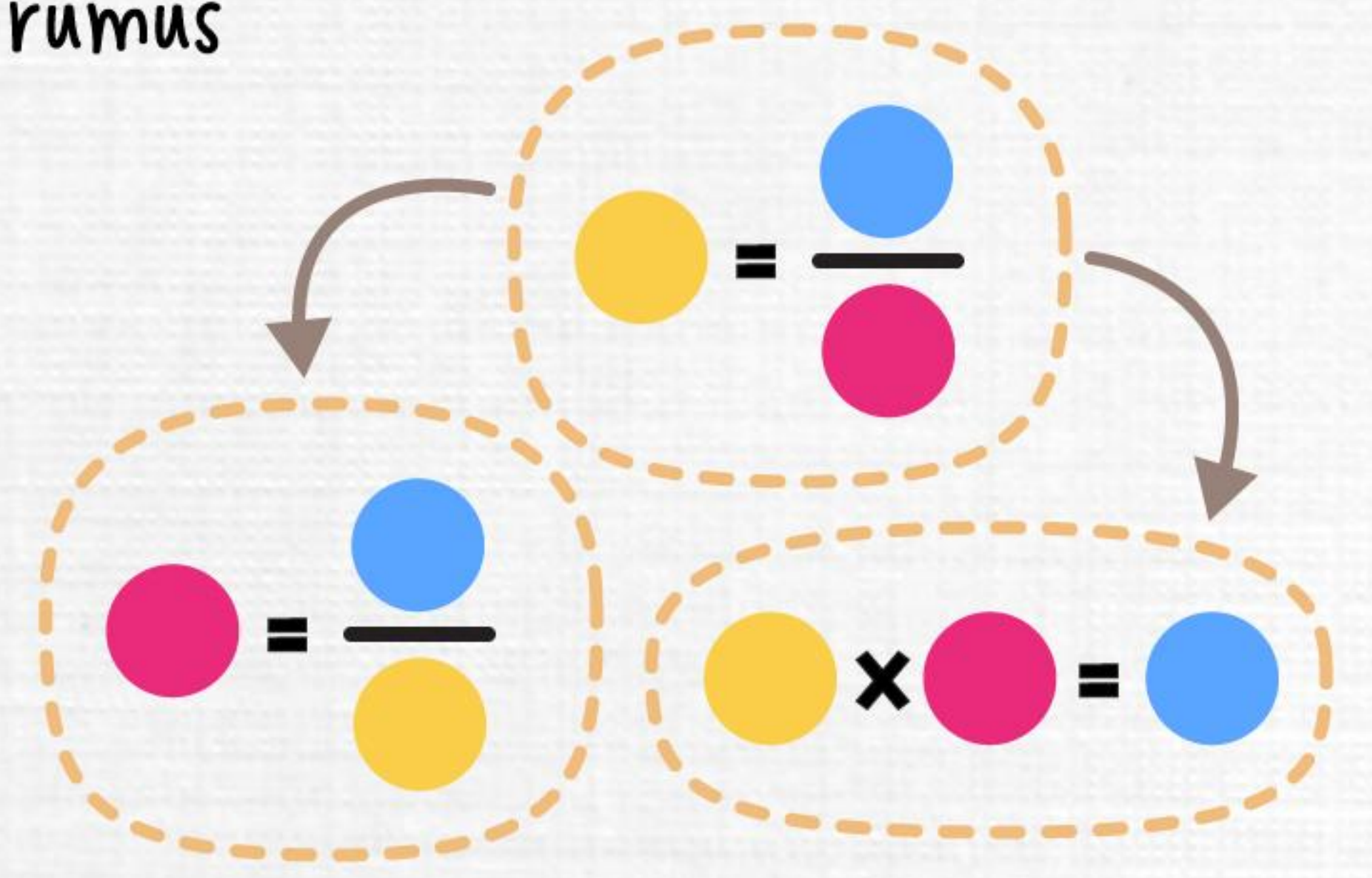$$2b = \frac{14}{a}$$

$$a = \frac{14}{2b}$$

$$a = \frac{7}{b}$$

$$\frac{14}{2} = 7$$

$$3b = \frac{20}{6a}$$

$$6a = \frac{20}{3b}$$

$$a = \frac{20}{(6)(3b)}$$

$$a = \frac{20}{18b}$$

$$a = \frac{10}{9b}$$

$$\frac{20}{18} = \frac{10}{9}$$

$\div 2$

kecilkan

$$\frac{\bullet}{\bullet} \quad \bullet = \frac{\bullet}{\bullet} \quad \bullet \times \bullet = \bullet$$

$$2b = \frac{12b - 4a}{5}$$

$$(5)(2b) = 12b - 4a$$

$$10b = 12b - 4a$$

$$4a + 10b = 12b$$

$$4a = 12b - 10b$$

$$4a = 2b$$

$$a = \frac{2b}{4}$$

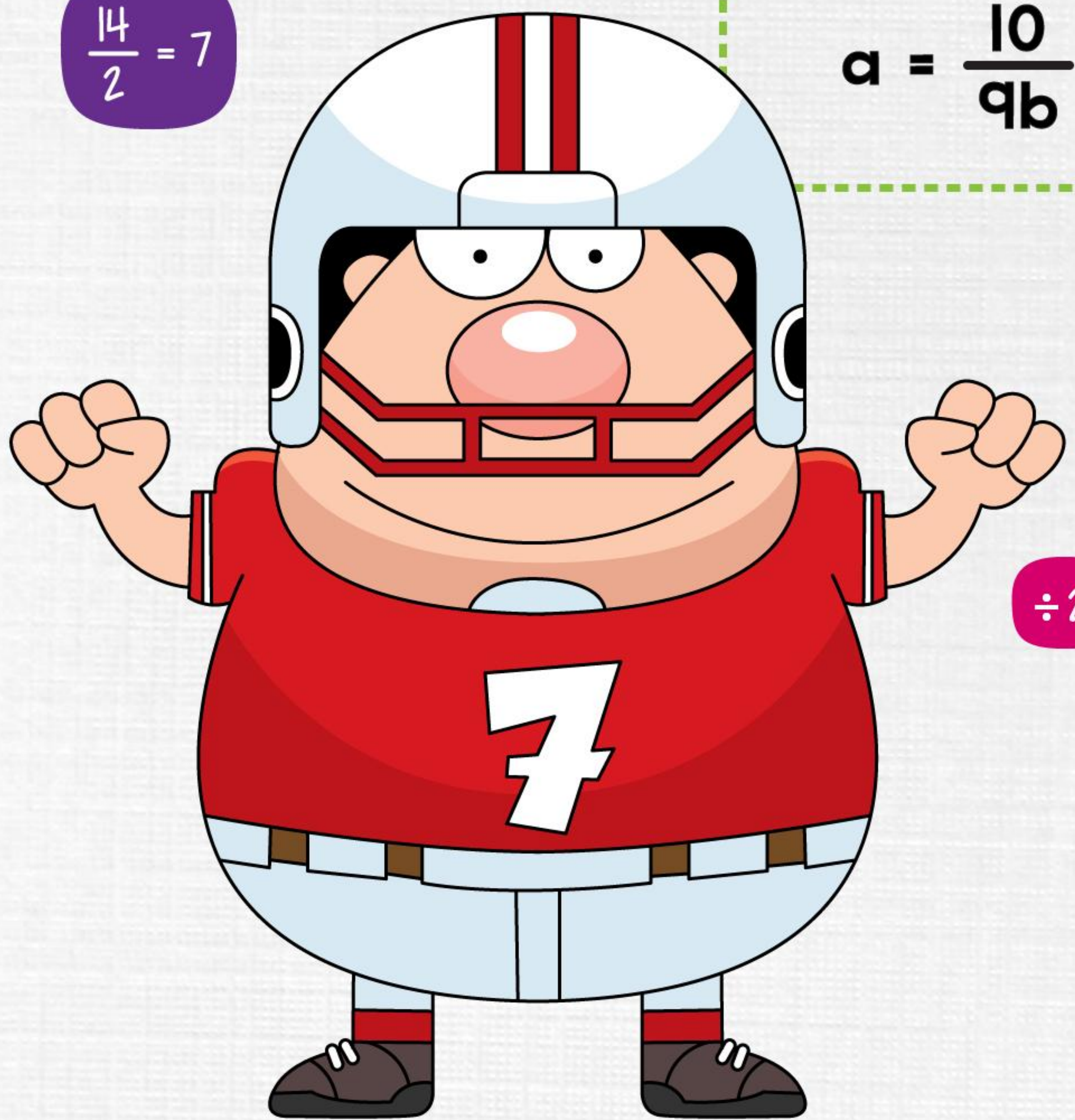$$a = \frac{b}{2}$$

$\div 2$

$$\frac{2}{4} = \frac{1}{2}$$

kecilkan

kapur puteh

RUMUS ALGEBRA

ungkapkan a sebagai perkara rumus

$$\sqrt{a} = b$$
$$a = b^2$$

tukar tempat

$$b = a^2$$
$$a^2 = b$$
$$a = \sqrt{b}$$

$$b = \sqrt{\frac{a}{7}}$$
$$\sqrt{\frac{a}{7}} = b$$
$$\frac{a}{7} = b^2$$
$$a = 7b^2$$

punca kuasa 2 pindah jadi kuasa 2

$$b = \frac{a^2}{q}$$
$$\frac{a^2}{q} = b$$
$$a^2 = qb$$
$$a = \sqrt{qb}$$

$$b = \frac{5}{a^2}$$
$$a^2 = \frac{5}{b}$$
$$a = \sqrt{\frac{5}{b}}$$

kuasa 2 pindah jadi punca kuasa 2

kapur puteh

RUMUS ALGEBRA

$a = 9b - 5c$

Kira nilai:
a) a apabila $b = 4$ dan $c = 3$
b) b apabila $a = 17$ dan $c = 2$
c) c apabila $a = 48$ dan $b = 5$

$$a = 9b - 5c$$
$$a = 9(4) - 5(3)$$
$$= 36 - 15$$
$$= 21$$

$$a = 9b - 5c$$
$$9b - 5c = a$$
$$9b = a + 5c$$
$$b = \frac{a + 5c}{9}$$
$$b = \frac{17 + 5(2)}{9}$$
$$= \frac{17 + 10}{9}$$
$$= \frac{27}{9}$$
$$= 3$$

$$a = 9b - 5c$$
$$9b - 5c = a$$
$$-5c = a - 9b$$
$$c = \frac{a - 9b}{-5}$$
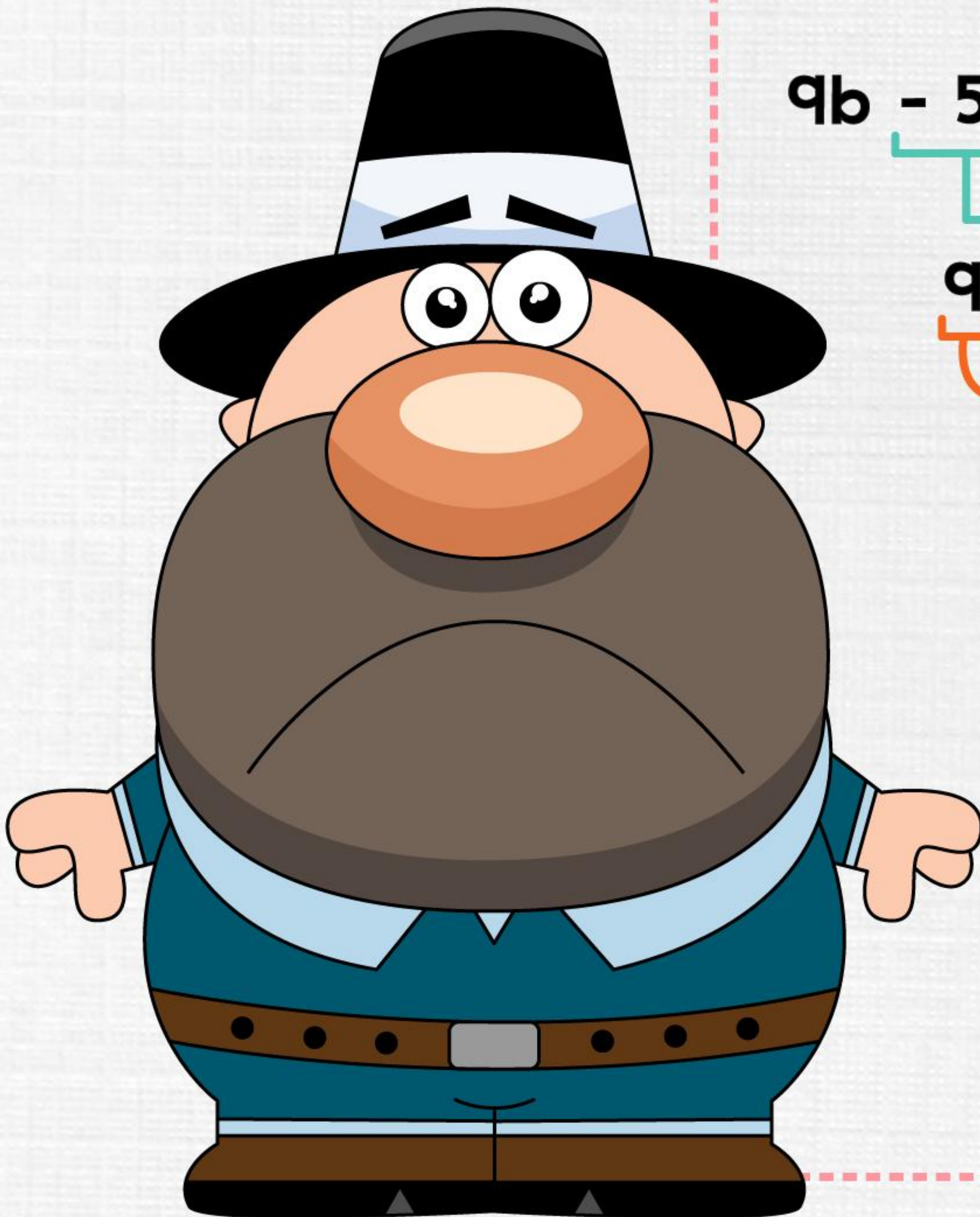$$c = \frac{48 - 9(5)}{-5}$$
$$= \frac{48 - 45}{-5}$$
$$= \frac{3}{-5}$$
$$= -\frac{3}{5}$$

ungkapkan b sebagai perkara rumus

ungkapkan c sebagai perkara rumus

kapur puteh

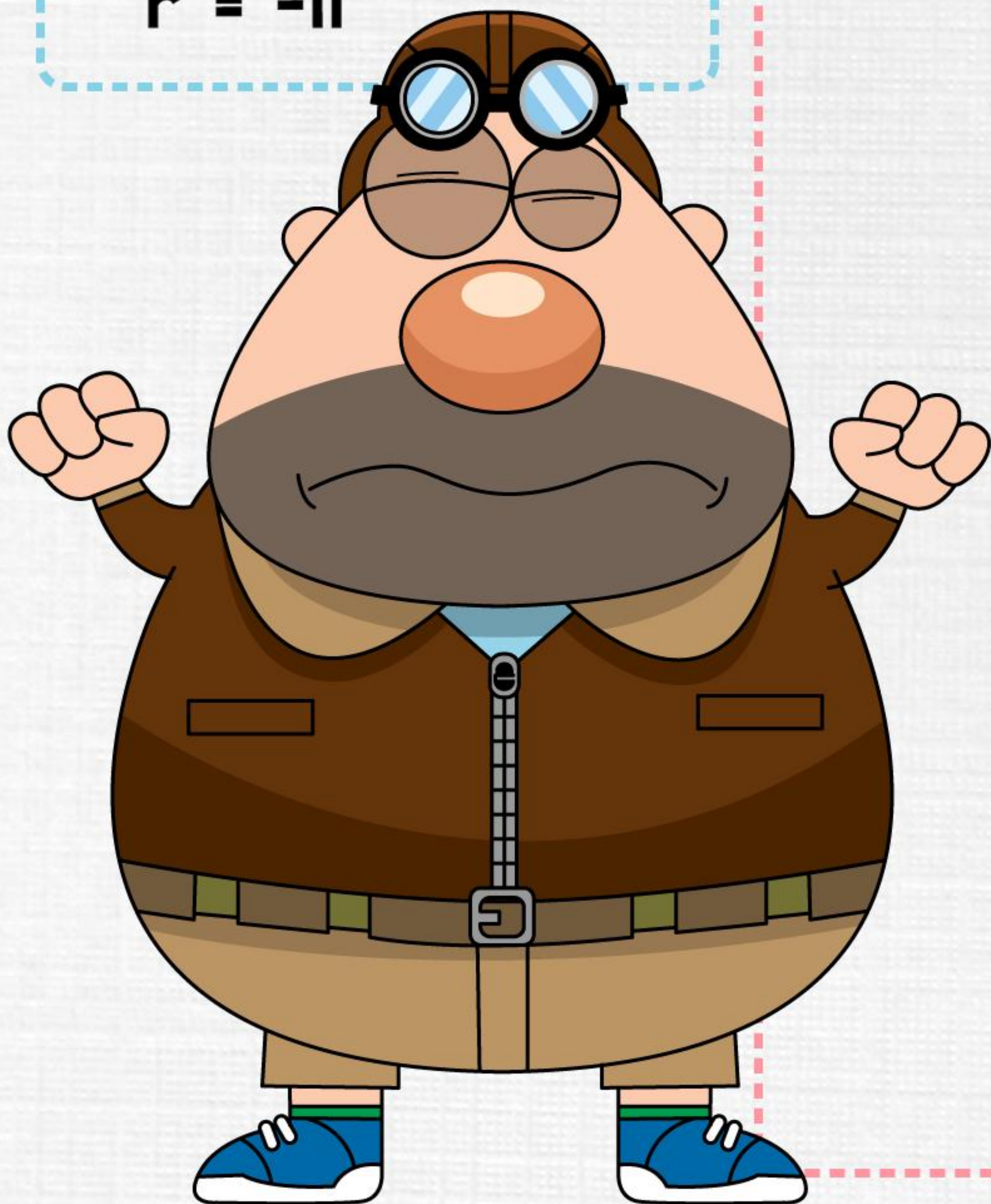# RUMUS ALGEBRA

$$3r = -7s + 2v$$

Kira nilai:
a) r apabila s = 5 dan v = 1
b) s apabila r = 8 dan v = 3
c) v apabila r = 4 dan s = 2

$$3r = -7s + 2v$$
$$3r = -7(5) + 2(1)$$
$$3r = -35 + 2$$
$$3r = -33$$
$$r = \frac{-33}{3}$$
$$r = -11$$

$$3r = -7s + 2v$$
$$-7s + 2v = 3r$$

$$-7s = 3r - 2v$$

$$s = \frac{3r - 2v}{-7}$$

$$s = \frac{3(8) - 2(3)}{-7}$$

$$= \frac{24 - 6}{-7}$$

$$= \frac{18}{-7}$$

$$= -\frac{18}{7}$$

$$3r = -7s + 2v$$
$$-7s + 2v = 3r$$

$$2v = 3r + 7s$$

$$v = \frac{3r + 7s}{2}$$

$$v = \frac{3(4) + 7(2)}{2}$$

$$= \frac{12 + 14}{2}$$

$$= \frac{26}{2}$$

$$= 13$$

ungkapkan v sebagai perkara rumus

ungkapkan s sebagai perkara rumus

kapur puteh

RUMUS ALGEBRA

$3r^2 = s + v$

Kira nilai r apabila
$s = 7$ & $v = 5$.

$$3r^2 = s + v$$

$$r^2 = \frac{s + v}{3}$$

$$r = \sqrt{\frac{s + v}{3}}$$

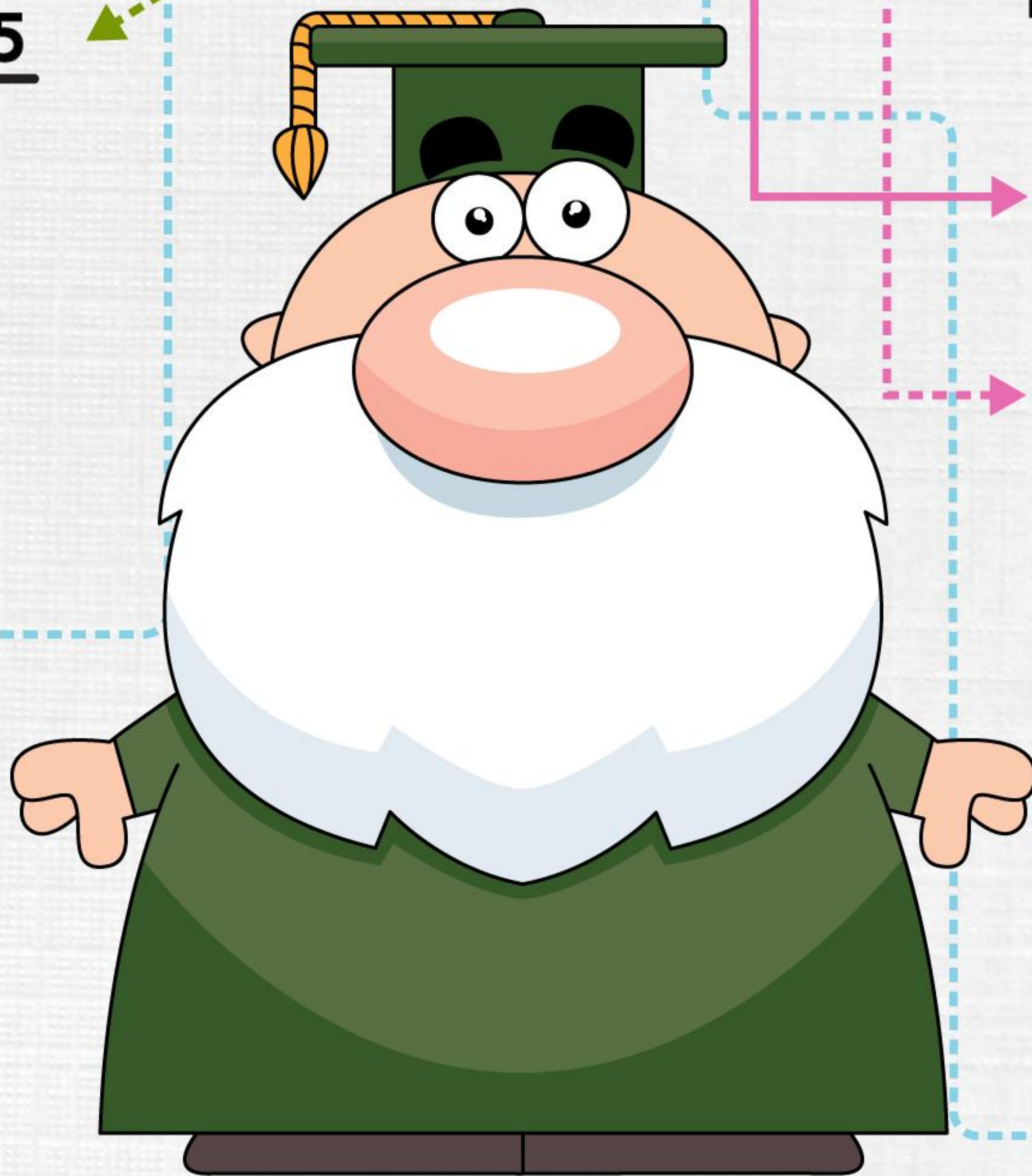$$r = \sqrt{\frac{7 + 5}{3}}$$

$$= \sqrt{\frac{12}{3}}$$

$$= \sqrt{4}$$

$$= 2$$

ungkapkan r sebagai perkara rumus

ganti s = 7 v = 5

ungkapkan r sebagai perkara rumus

ganti s = 8 v = 2

$-5s = -4r^2 - 2v$

Kira nilai r apabila $s = 8$ & $v = 2$.

$$-5s = -4r^2 - 2v$$

$$-4r^2 - 2v = -5s$$

$$-4r^2 = -5s + 2v$$

$$r^2 = \frac{-5s + 2v}{-4}$$

$$r = \sqrt{\frac{-5s + 2v}{-4}}$$

$$r = \sqrt{\frac{-5(8) + 2(2)}{-4}}$$

$$= \sqrt{\frac{-40 + 4}{-4}}$$

$$= \sqrt{\frac{-36}{-4}}$$

$$= \sqrt{9}$$

$$= 3$$

kapur puteh

RUMUS ALGEBRA

$2\sqrt{r} = 3s - v$

Kira nilai r apabila s = 4 & v = 7.

$$2\sqrt{r} = 3s - v$$

$$\sqrt{r} = \frac{3s - v}{2}$$

$$r = \left(\frac{3s - v}{2}\right)^2$$

$$r = \left(\frac{3(4) - 7}{2}\right)^2$$

$$= \left(\frac{12 - 7}{2}\right)^2$$

$$= \left(\frac{5}{2}\right)^2$$

$$= \frac{25}{4}$$

ganti s = 4, v = 7

ungkapkan r sebagai perkara rumus

$2\sqrt{5r - 2v} = 6s$

Kira nilai r apabila s = 2 & v = −8.

$$2\sqrt{5r - 2v} = 6s$$

$$\sqrt{5r - 2v} = \frac{6s}{2}$$

$$\sqrt{5r - 2v} = 3s$$

$$5r - 2v = (3s)^2$$

$$5r - 2v = 9s^2$$

$$5r = 9s^2 + 2v$$

$$r = \frac{9s^2 + 2v}{5}$$

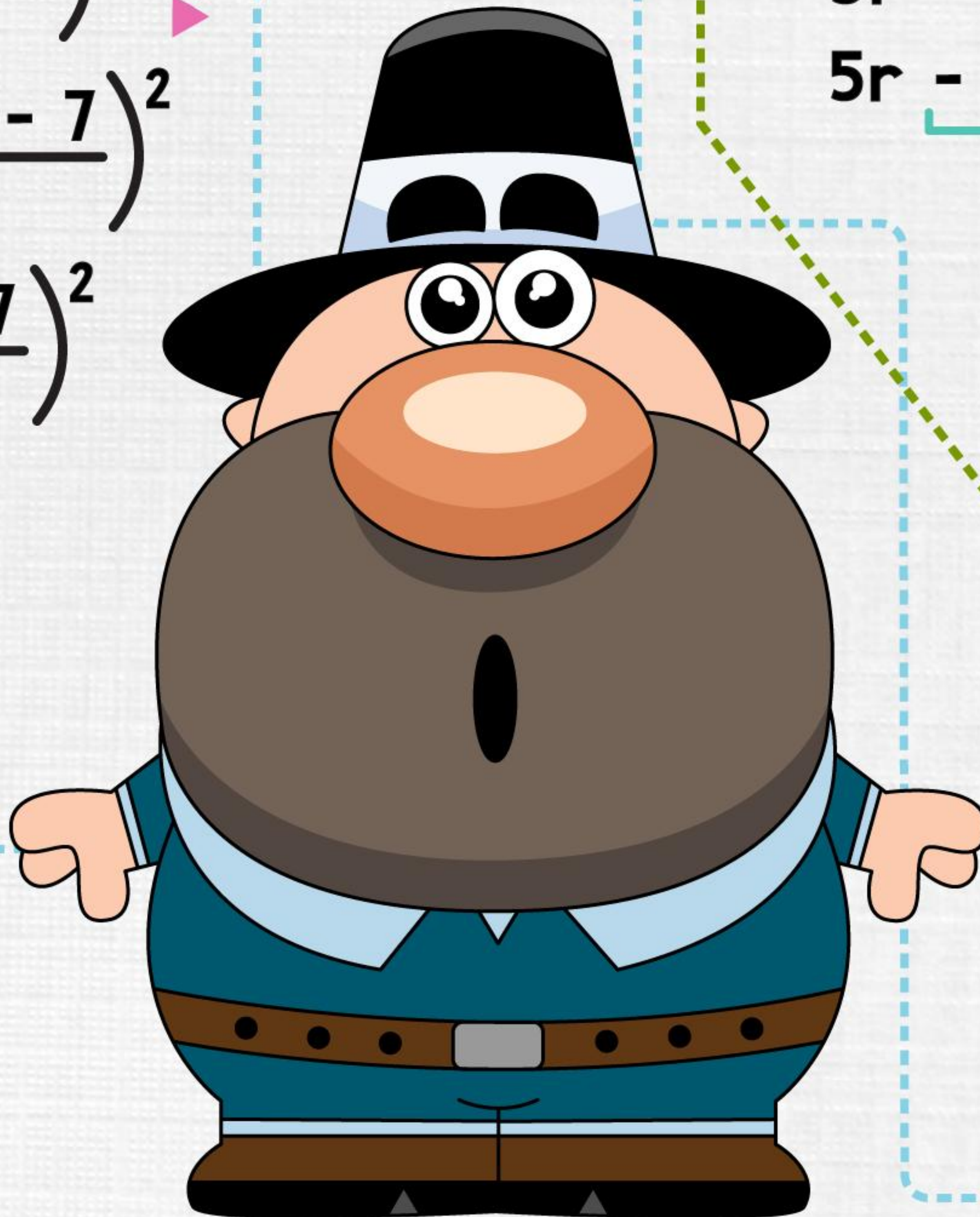$$= \frac{9(2)^2 + 2(-8)}{5}$$

$$= \frac{36 - 16}{5}$$

$$= \frac{20}{5}$$

$$= 4$$

ganti s = 2, v = −8

ungkapkan r sebagai perkara rumus

KAPURPUTEH

"success is the sum of small efforts
repeated day in and day out"