

BAB 2: BENTUK PIAWAI

MATEMATIK TINGKATAN 3

bentuk piawai

Angka Bererti

digit
bukan 0
ialah
angka
bererti

875
27918
3.74
264.9

3 a.b

5 a.b

4 a.b

3 a.b

digit 0
di tengah
ialah
angka
bererti

4007
62001
5.02
30.0708

4 a.b

5 a.b

3 a.b

6 a.b

untuk
perpuluhan,
digit 0 di belakang
ialah angka
bererti

3.570
47.000

4 a.b

5 a.b

untuk
perpuluhan,
digit 0 di depan
bukan angka
bererti

0.057
0.00740

2 a.b

3 a.b

untuk
nomor
bulat,
0 di belakang
bukan
angka
bererti,
kecuali
dinyatakan

7300
7300
68000
68000

2 a.b

3 a.b

2 a.b

5 a.b

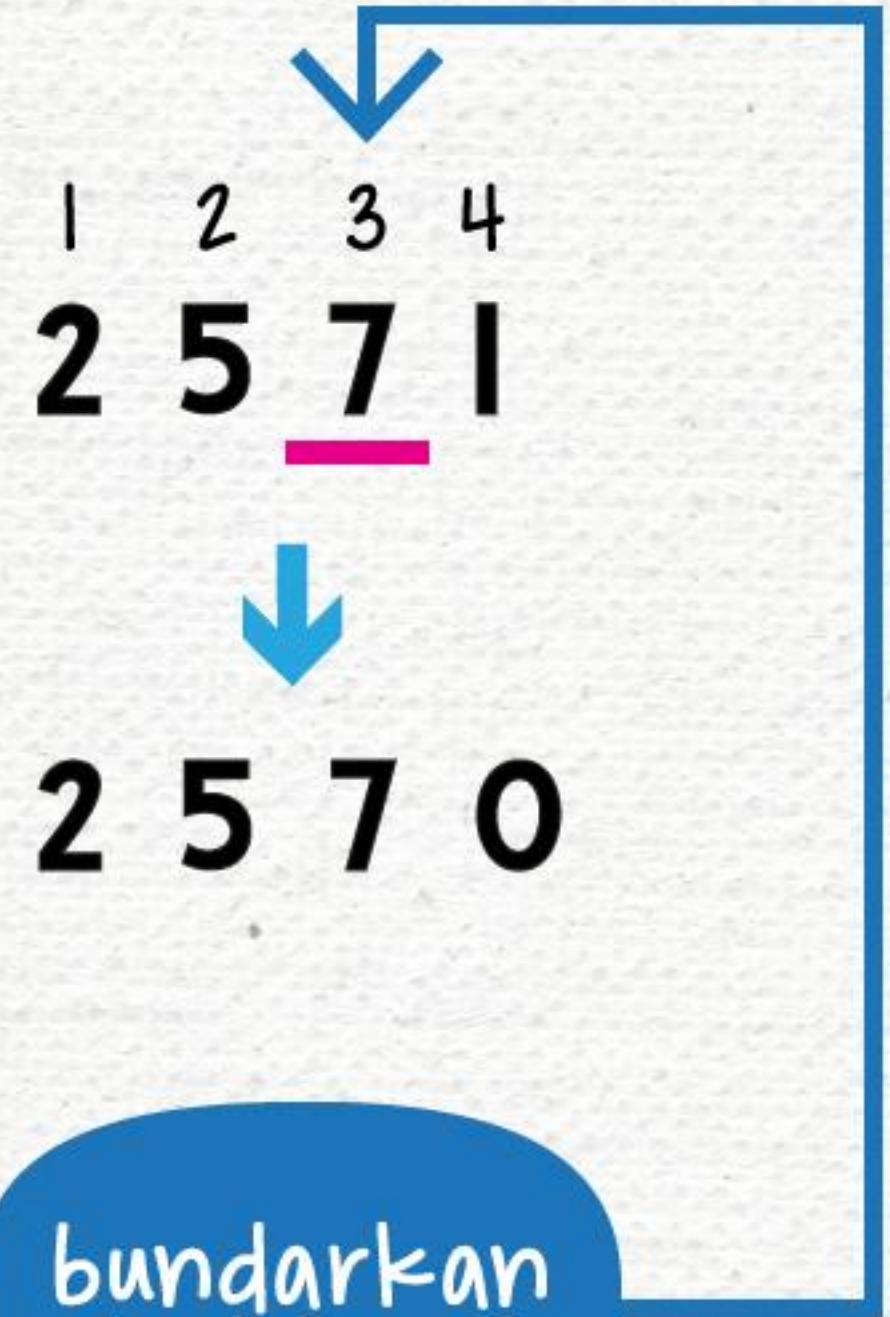
kabur
puteh



bentuk piawai

Angka Bererti

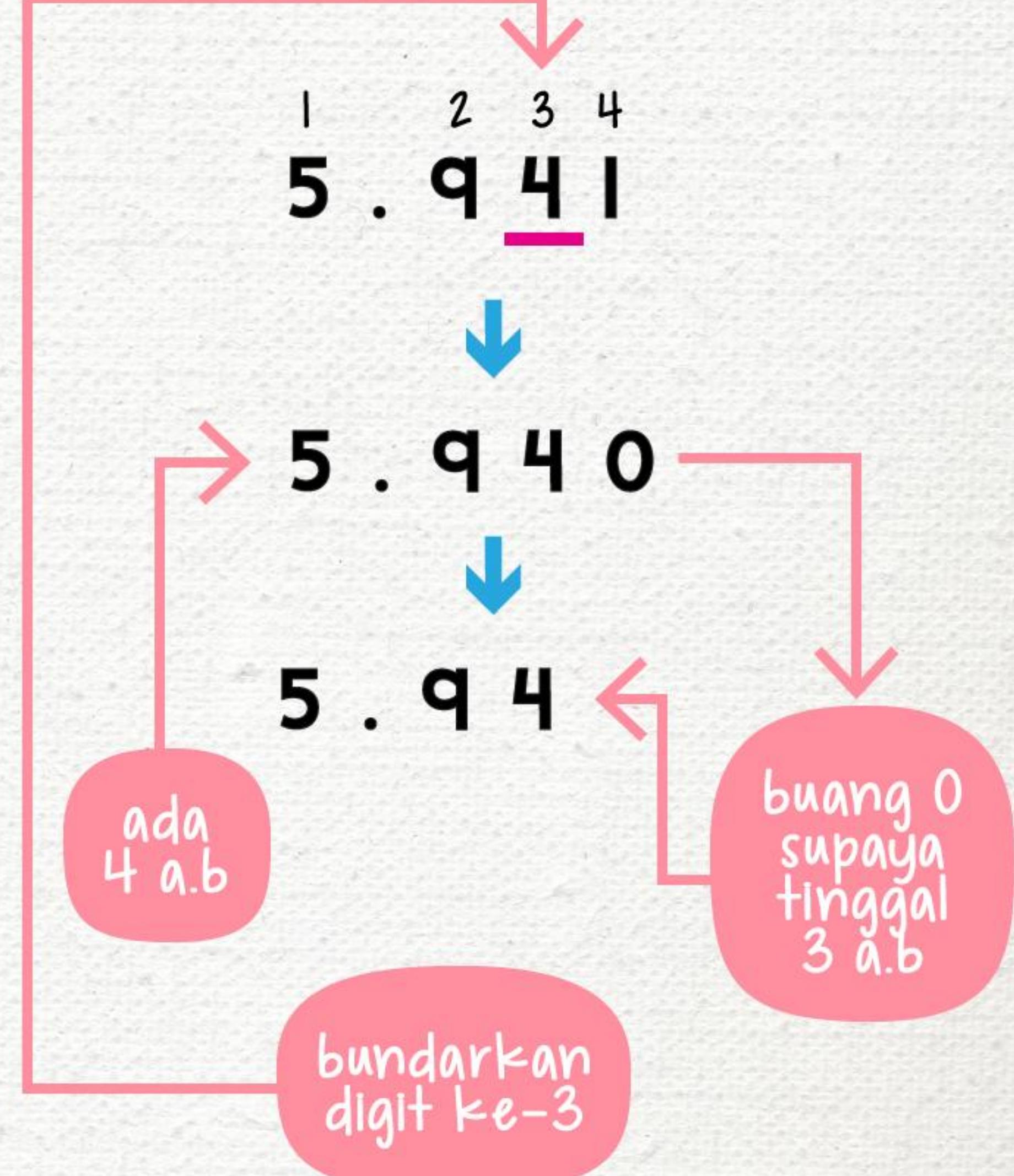
bundarkan betul
kepada 3 a.b



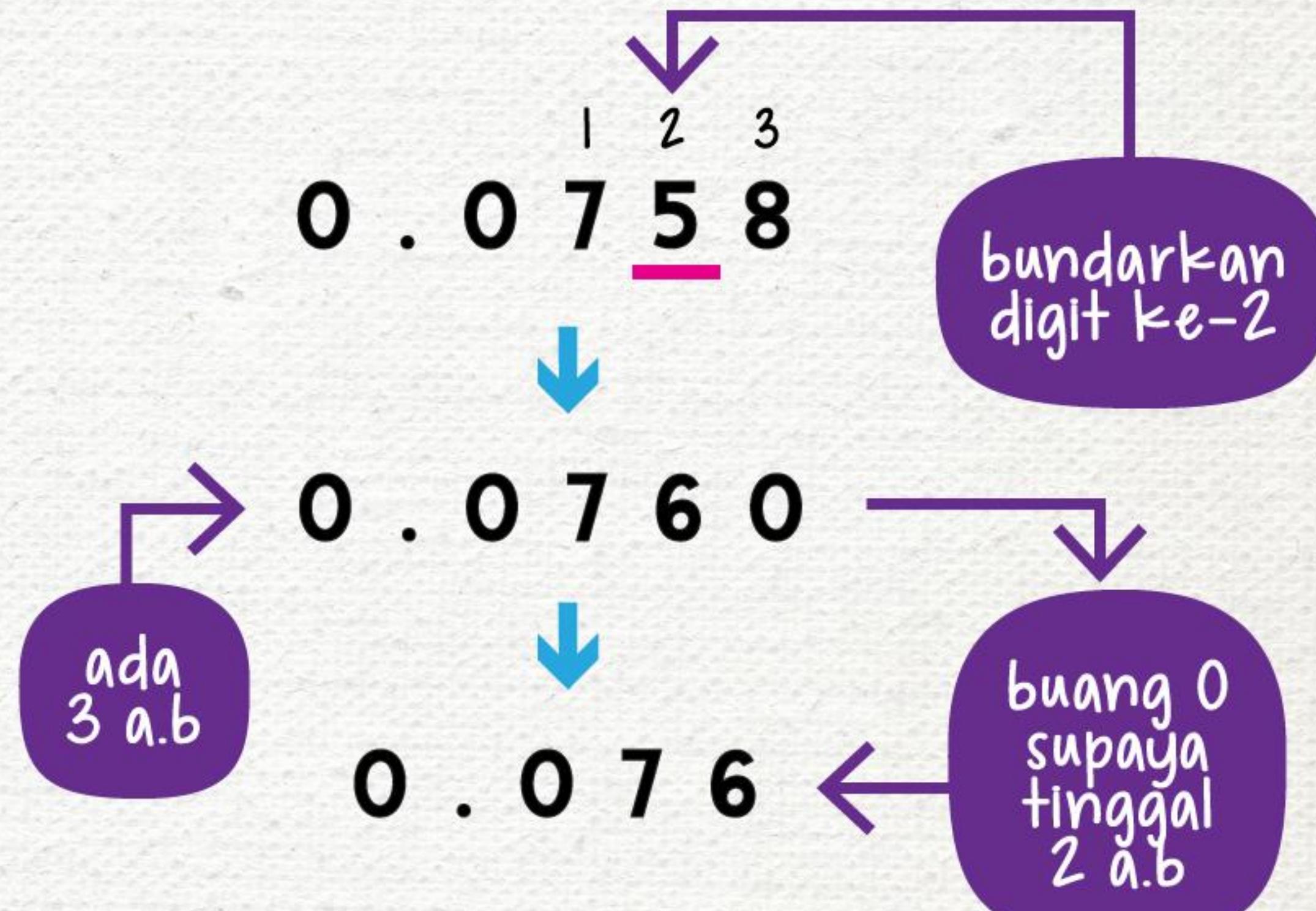
bundarkan betul
kepada 2 a.b



bundarkan betul
kepada 3 a.b



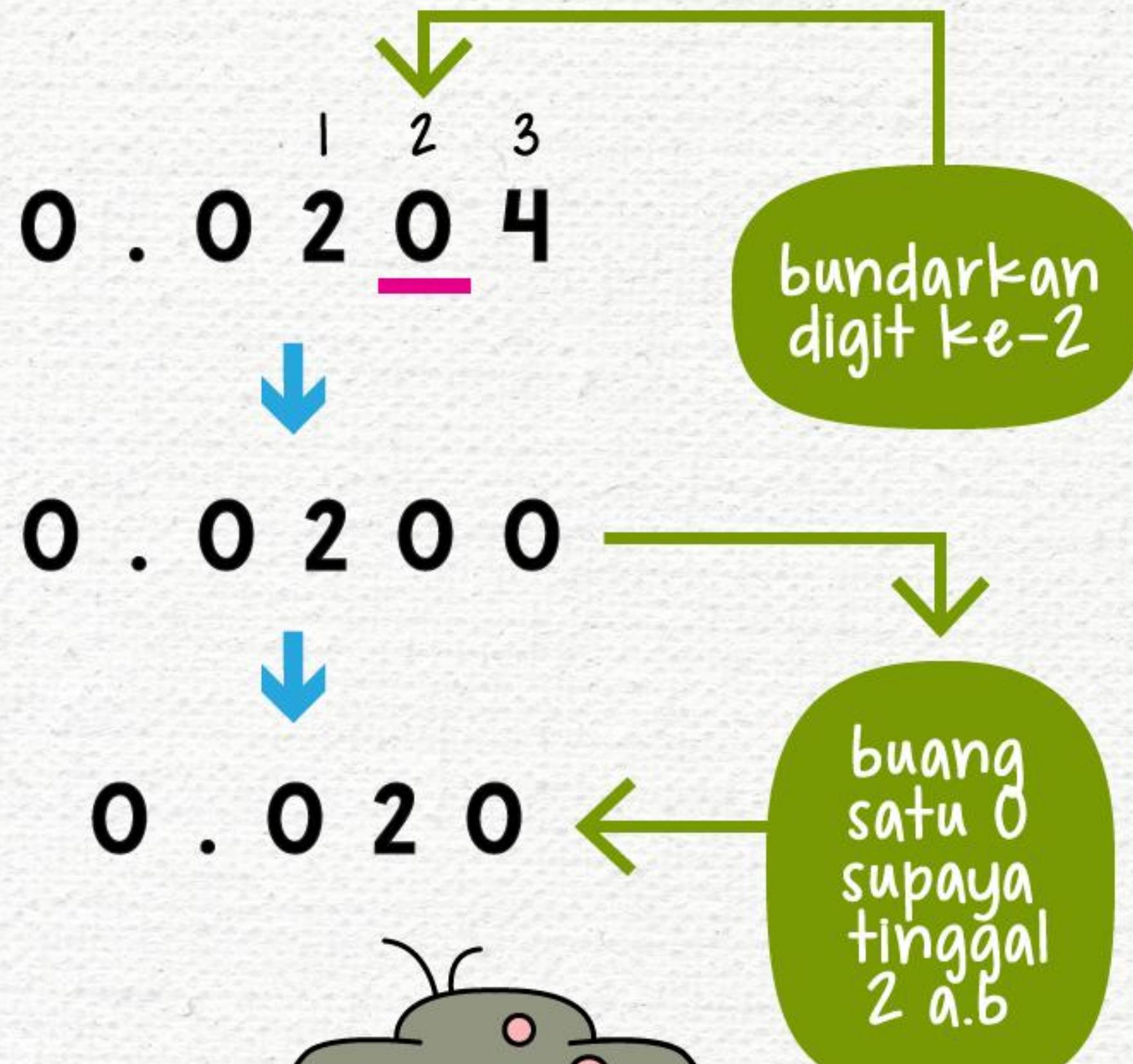
bundarkan betul
kepada 2 a.b



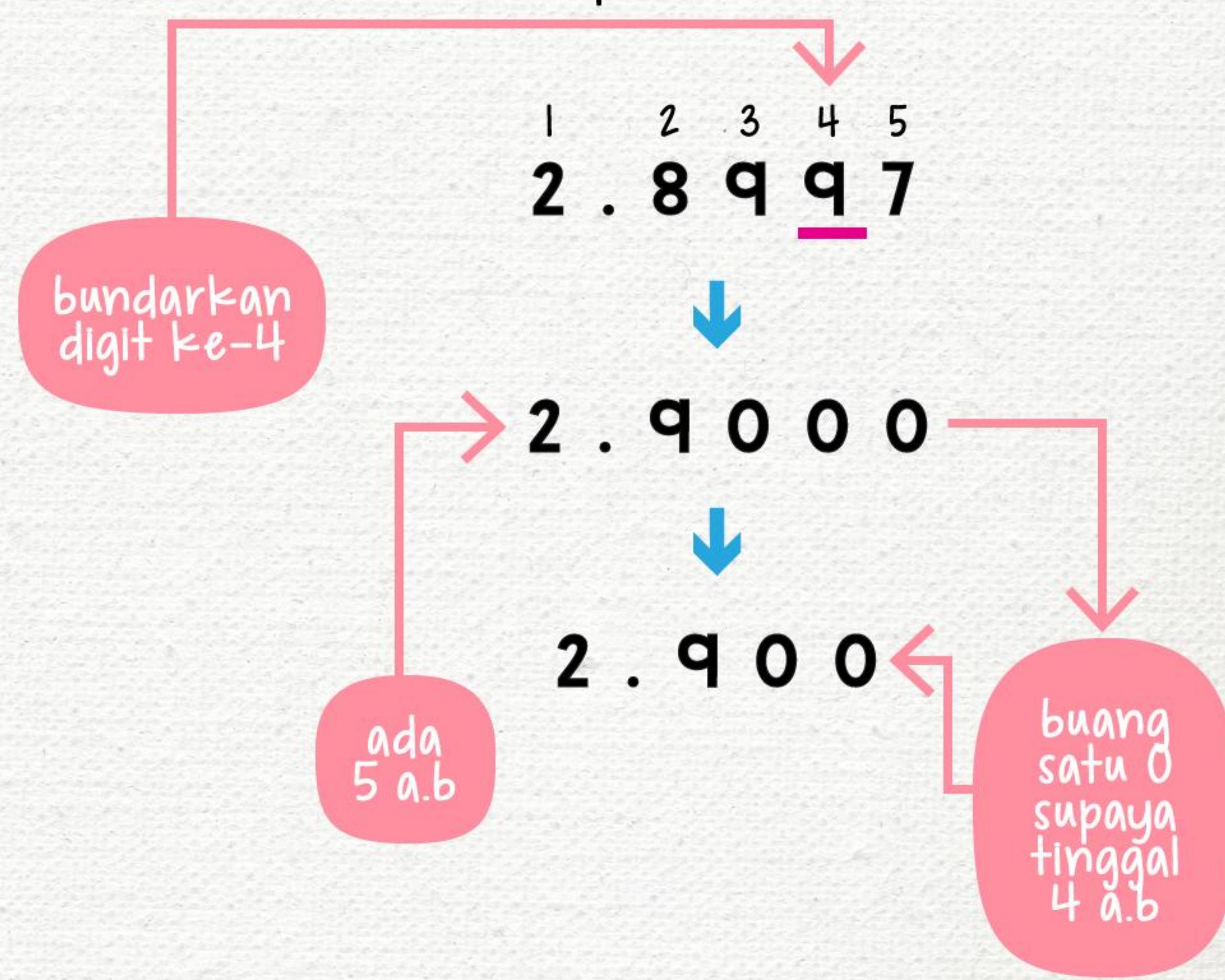
bentuk piawai

Angka Bererti

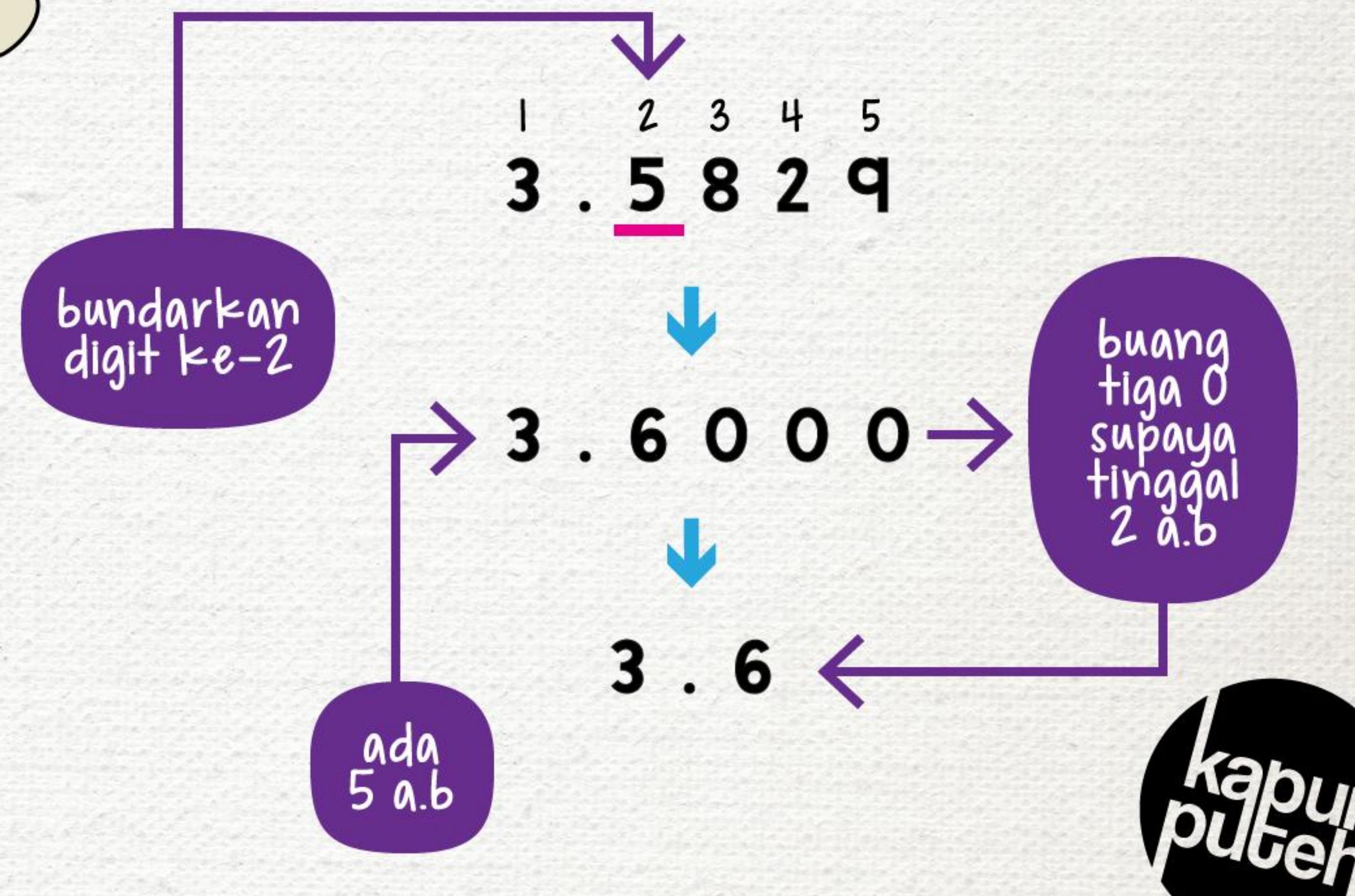
bundarkan betul
kepada 2 a.b



bundarkan betul
kepada 4 a.b



bundarkan betul
kepada 2 a.b



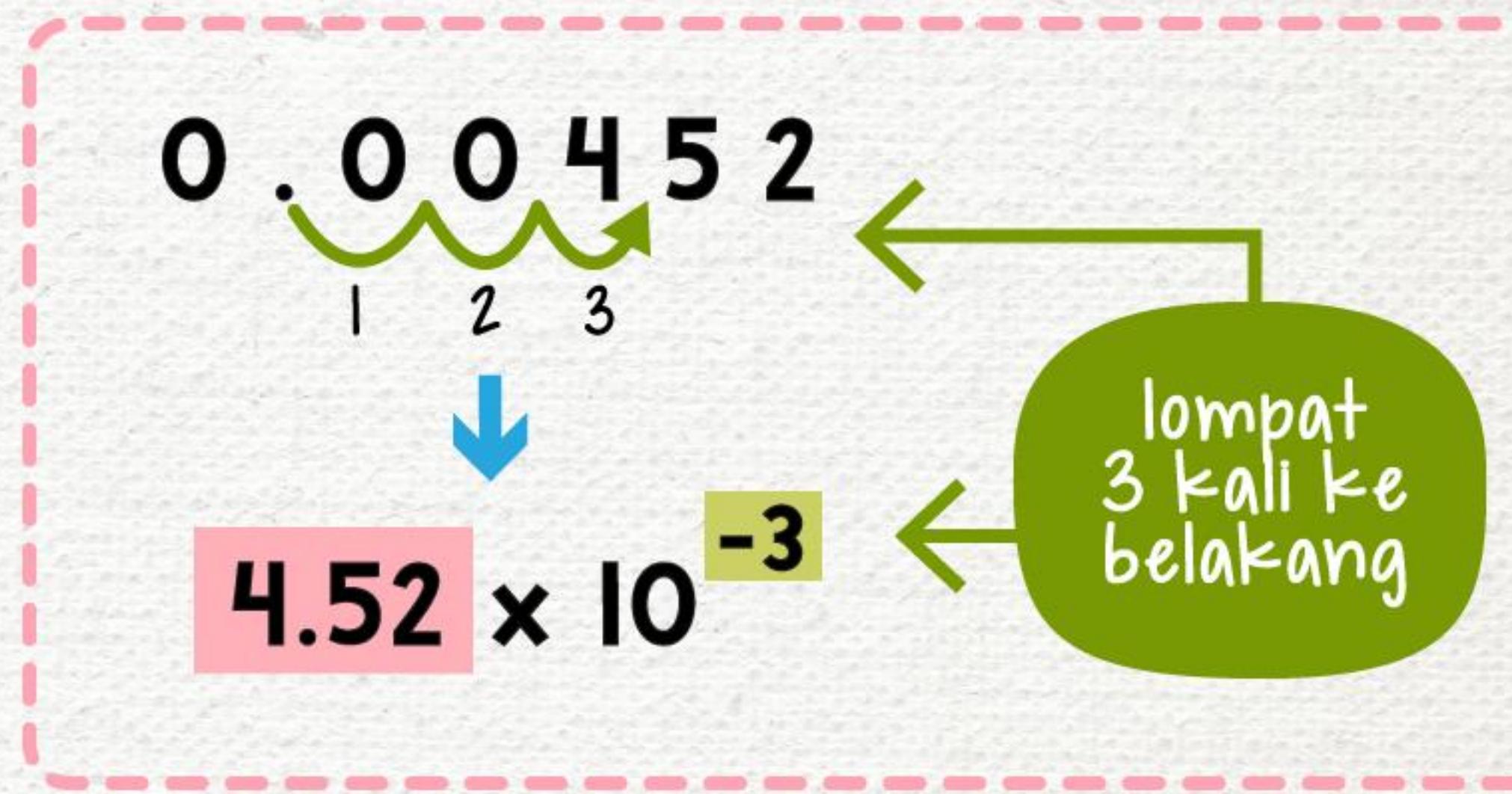
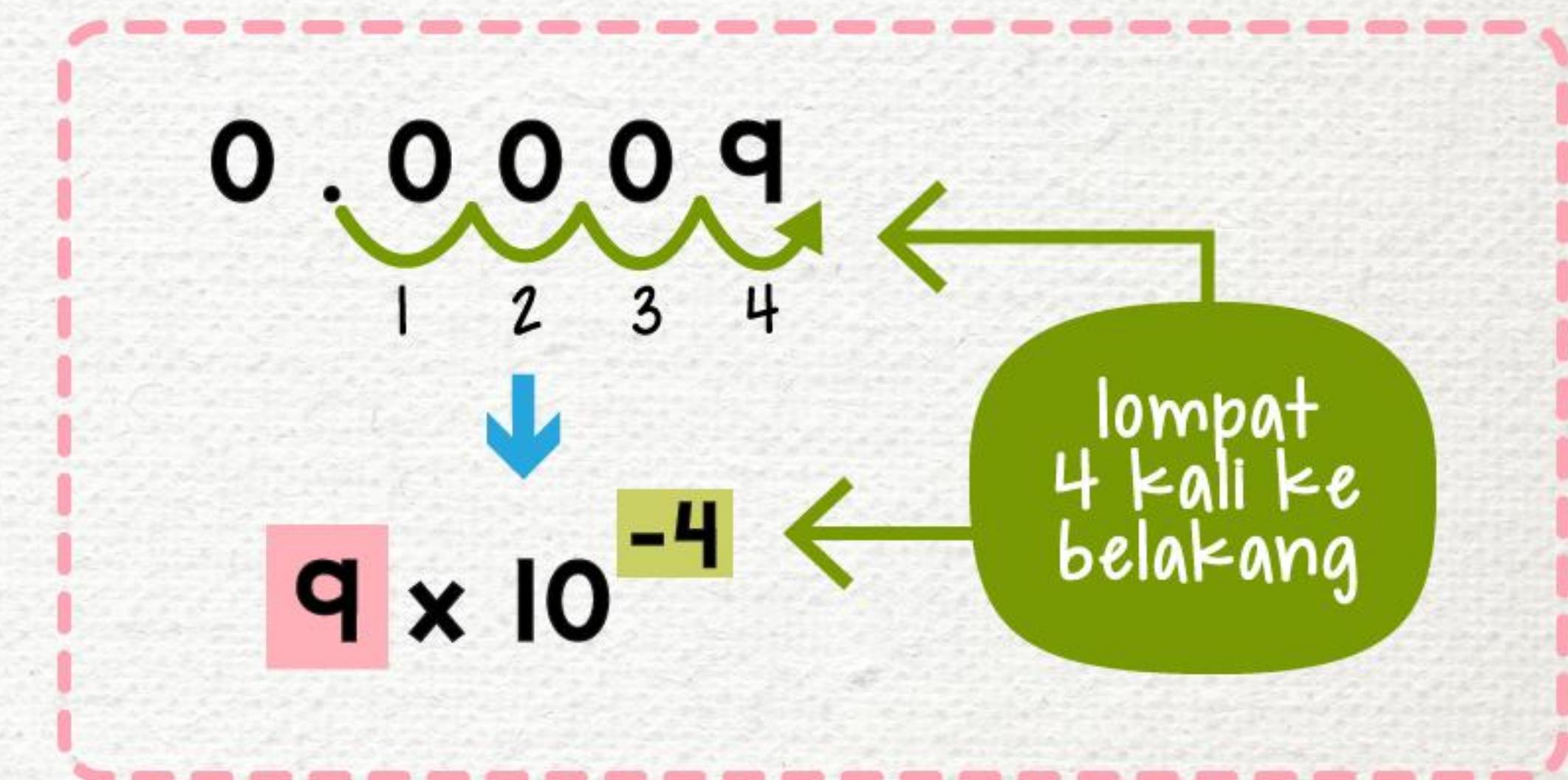
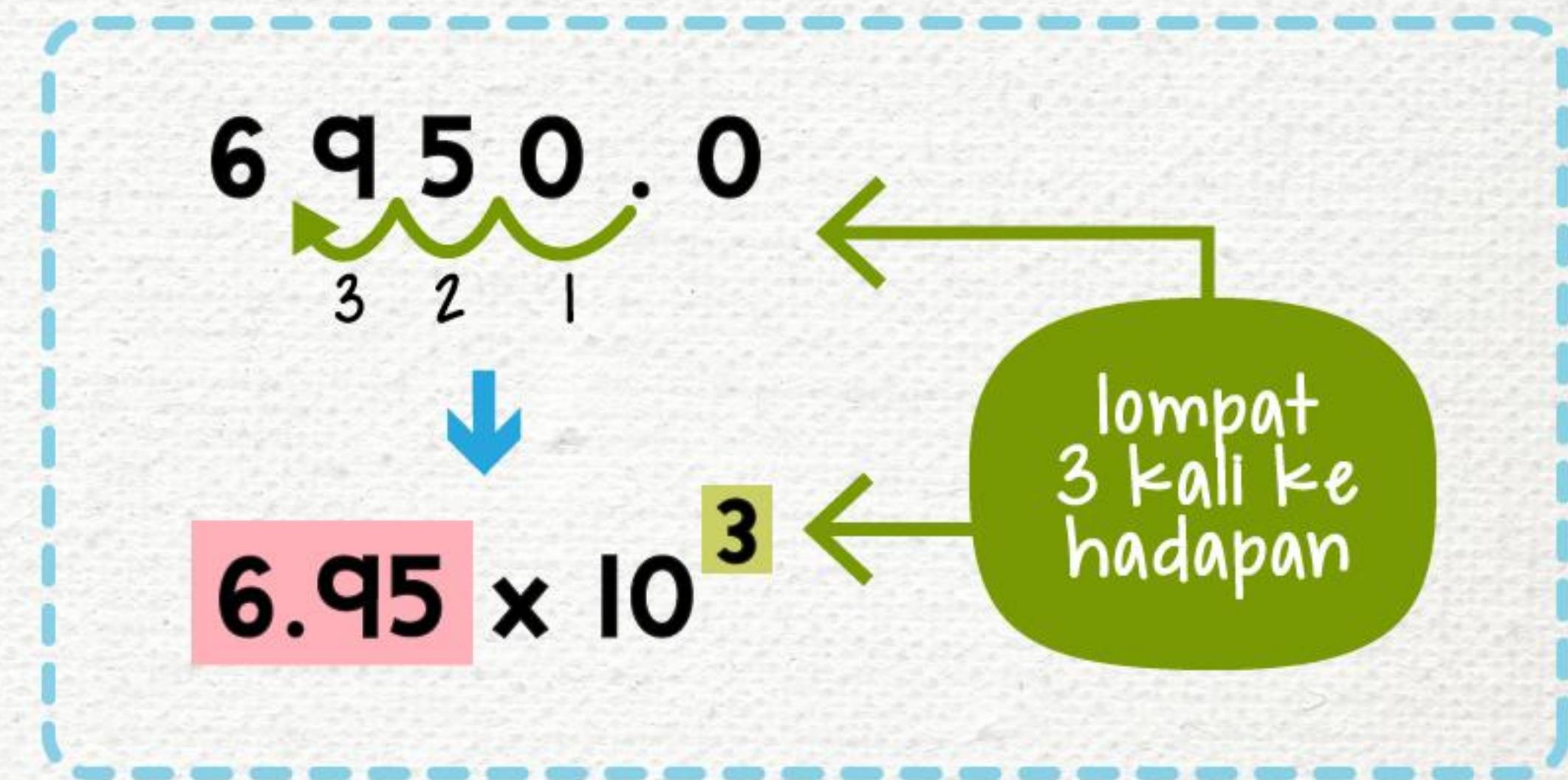
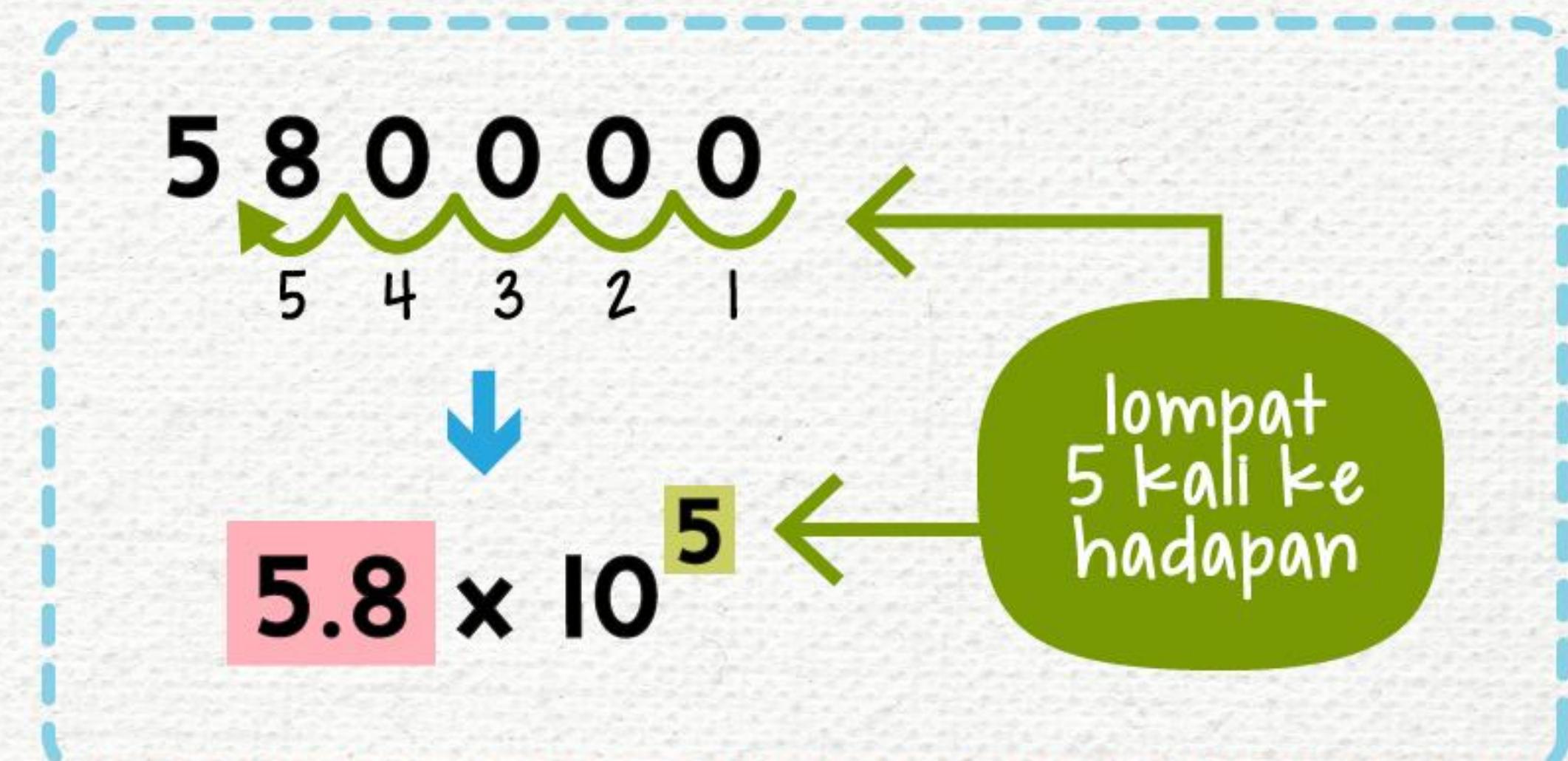
kabur
puteh

bentuk piawai



lompat ke
hadapan =
positif

lompat ke
belakang =
negatif



bentuk piawai

$$3.2 \times 10^5$$

$= 3.2$

$= 320000$

$$8.375 \times 10^4$$

$= 8.375$

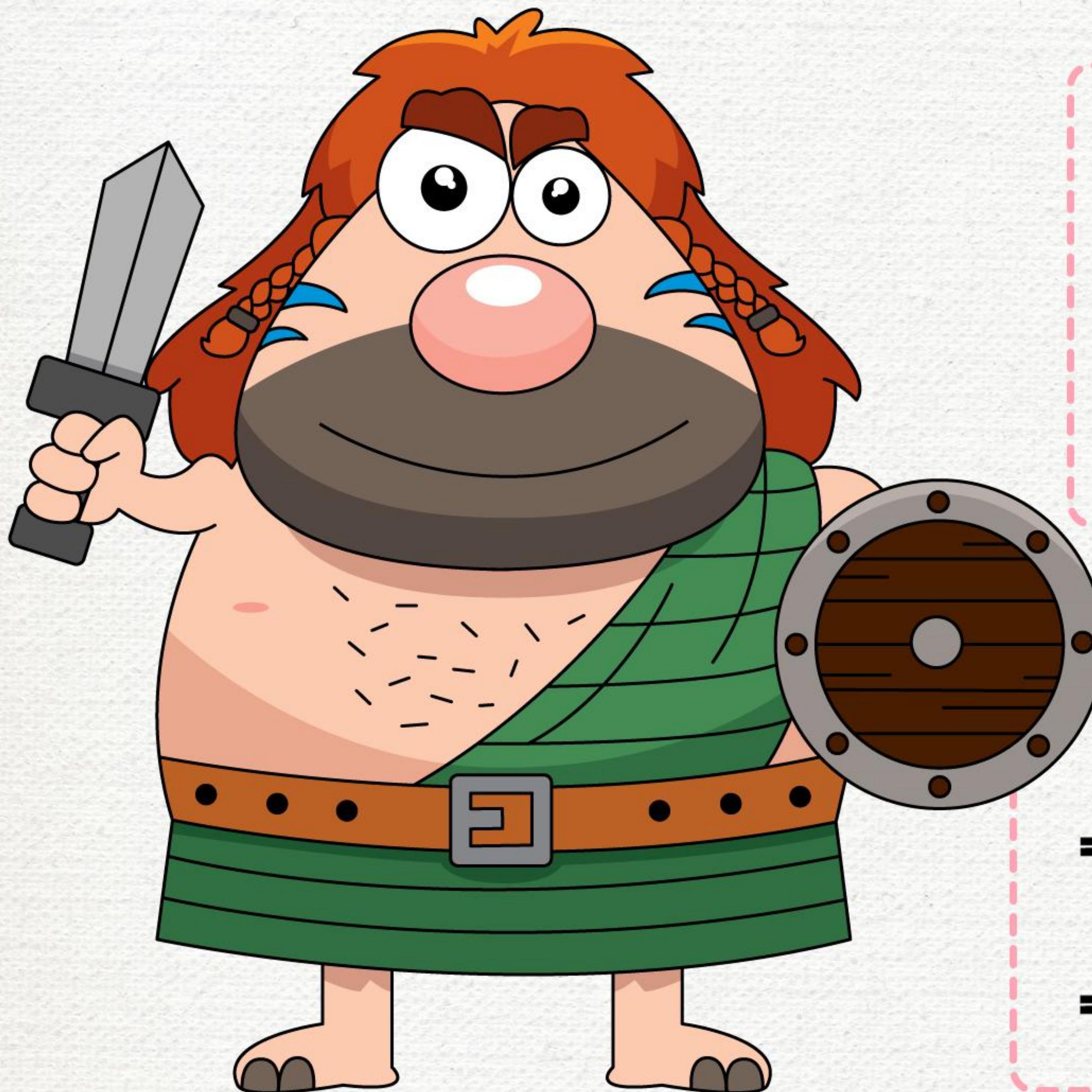
$= 83750$

positif = gerak ke kanan

negatif = gerak ke kiri

pindahkan titik perpuluhan ke kiri atau ke kanan

bergantung kepada positif atau negatif



$$5.2 \times 10^{-4}$$

$= 5.2$

$= 0.00052$

$$2.471 \times 10^{-3}$$

$= 2.471$

$= 0.002471$

bentuk piawai

$$3.25 \times 10^5 + 4.71 \times 10^5$$
$$= (3.25 + 4.71) \times 10^5$$
$$= 7.96 \times 10^5$$

tambah atau tolak seperti biasa kerana nilai kuasa sama

$$9.47 \times 10^7 - 2.83 \times 10^7$$
$$= (9.47 - 2.83) \times 10^7$$
$$= 6.64 \times 10^7$$



$$2.65 \times 10^{-4} + 1.97 \times 10^{-4}$$
$$= (2.65 + 1.97) \times 10^{-4}$$
$$= 4.62 \times 10^{-4}$$

$$8.29 \times 10^{-7} - 3.54 \times 10^{-7}$$
$$= (8.29 - 3.54) \times 10^{-7}$$
$$= 4.75 \times 10^{-7}$$

bentuk piawai

$$4.52 \times 10^4 + 2.17 \times 10^5$$

$$= 4.52 \times 10^4 + 21.7 \times 10^4$$

$$= (4.52 + 21.7) \times 10^4$$

$$= 26.22 \times 10^4$$

$$= 2.622 \times 10^5$$

$$2.17 \times 10^5$$

$$= 21.7 \times 10^{5-1}$$

$$= 21.7 \times 10^4$$

samakan
kuasa
dahulu
sebelum
jalankan
operasi

gerak
ke
belakang
= tolak

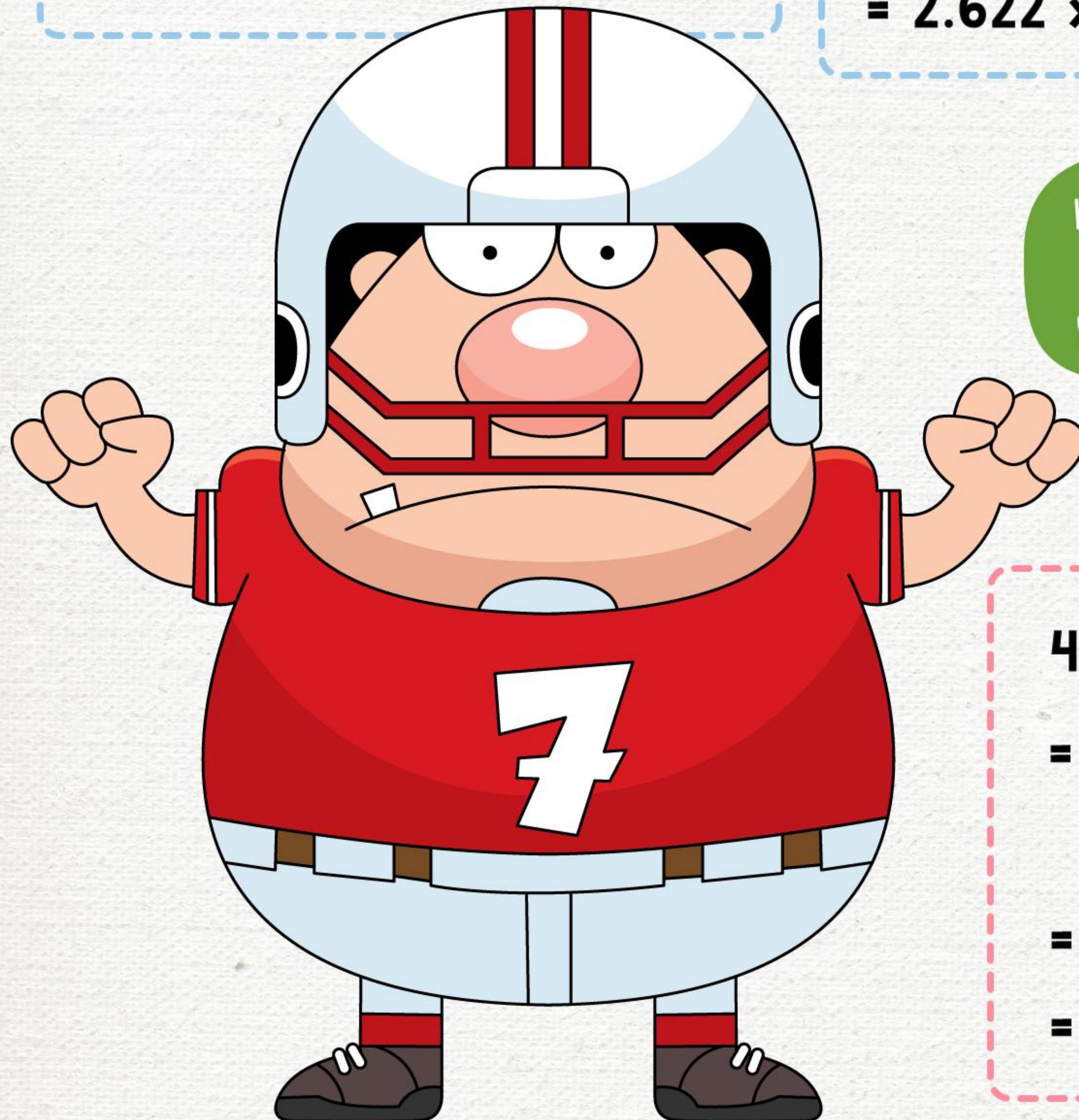
$$26.22 \times 10^4$$

$$= 2.622 \times 10^{4+1}$$

$$= 2.622 \times 10^5$$

tukar
jawapan
akhir
kepada
bentuk
piawai

gerak
ke
depan
= tambah



kedua-dua
cara beri
jawapan
yang sama

$$4.52 \times 10^4$$

$$= 0.452 \times 10^{4+1}$$

$$= 0.452 \times 10^5$$

$$4.52 \times 10^4 + 2.17 \times 10^5$$

$$= 0.452 \times 10^5 + 2.17 \times 10^5$$

$$= (0.452 + 2.17) \times 10^5$$

$$= 2.622 \times 10^5$$

kapur
puteh

bentuk piawai

$$\begin{aligned}
 & 2.47 \times 10^{-5} - 5.19 \times 10^{-7} \\
 &= 247 \times 10^{-7} - 5.19 \times 10^{-7} \\
 &\quad \downarrow \quad \downarrow \\
 &= (247 - 5.19) \times 10^{-7} \\
 &= 241.81 \times 10^{-7} \\
 &= 2.4181 \times 10^{-5}
 \end{aligned}$$

$$\begin{aligned}
 & 2.47 \times 10^{-5} \\
 &= 247 \times 10^{-5-2} \\
 &= 247 \times 10^{-7}
 \end{aligned}$$

samakan
kuasa
dahulu
sebelum
jalankan
operasi

$$\begin{aligned}
 & 241.81 \times 10^{-7} \\
 &= 2.4181 \times 10^{-7+2} \\
 &= 2.4181 \times 10^{-5}
 \end{aligned}$$

gerak
ke
belakang
= tolak

gerak
ke
depan
= tambah



kedua-dua
cara beri
jawapan
yang sama

$$\begin{aligned}
 & 5.19 \times 10^{-7} \\
 &= 0.0519 \times 10^{-7+2} \\
 &= 0.0519 \times 10^{-5}
 \end{aligned}$$

$$\begin{aligned}
 & 2.47 \times 10^{-5} - 5.19 \times 10^{-7} \\
 &= 2.47 \times 10^{-5} - 0.0519 \times 10^{-5} \\
 &\quad \downarrow \quad \downarrow \\
 &= (2.47 - 0.0519) \times 10^{-5} \\
 &= 2.4181 \times 10^{-5}
 \end{aligned}$$

kabur
puteh

bentuk piawai

$$\begin{aligned} & 3 \times 10^5 \times 4 \times 10^3 \\ &= (3 \times 4) \times 10^{5+3} \\ &= 12 \times 10^8 \\ &= 1.2 \times 10^9 \end{aligned}$$

$$\begin{aligned} & 12 \times 10^8 \\ &= 1.2 \times 10^9 \end{aligned}$$

$$\begin{aligned} & 2.5 \times 10^7 \times 5.6 \times 10^9 \\ &= (2.5 \times 5.6) \times 10^{7+9} \\ &= 14 \times 10^{16} \\ &= 1.4 \times 10^{17} \end{aligned}$$

untuk
darab,
kuasa
perlu
ditambah



$$\begin{aligned} & 14 \times 10^{16} \\ &= 1.4 \times 10^{17} \end{aligned}$$

$$\begin{aligned} & 52 \times 10^{-11} \\ &= 5.2 \times 10^{-10} \end{aligned}$$

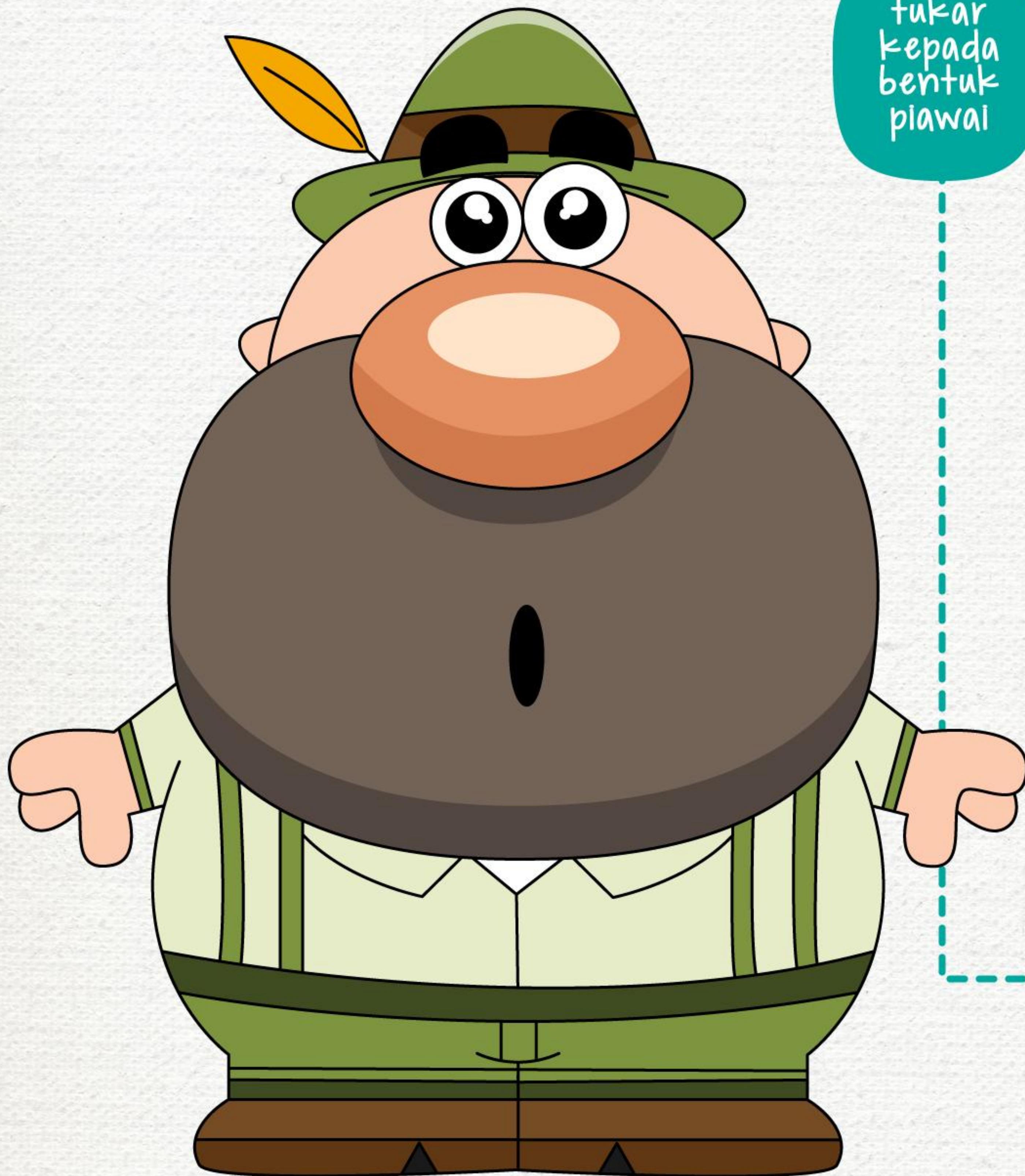
$$\begin{aligned} & 6.5 \times 10^{-8} \times 8 \times 10^{-3} \\ &= (6.5 \times 8) \times 10^{-8+(-3)} \\ &= 52 \times 10^{-11} \\ &= 5.2 \times 10^{-10} \end{aligned}$$

bentuk piawai

$$\begin{aligned}
 & 8 \times 10^9 \div 2 \times 10^3 \\
 &= (8 \div 2) \times 10^{9-3} \\
 &= 4 \times 10^6
 \end{aligned}$$

untuk
bahagi,
kuasa
perlu
ditolak

$$\begin{aligned}
 & 6.5 \times 10^4 \div 2.5 \times 10^7 \\
 &= (6.5 \div 2.5) \times 10^{4-7} \\
 &= 2.6 \times 10^{-3}
 \end{aligned}$$



$$\begin{aligned}
 & 7.2 \times 10^9 \div 8 \times 10^{-5} \\
 &= (7.2 \div 8) \times 10^{9-(-5)} \\
 &= 0.9 \times 10^{14} \\
 &= 9 \times 10^{13}
 \end{aligned}$$

$$\begin{aligned}
 & 2.25 \times 10^{-11} \div 7.5 \times 10^{-5} \\
 &= (2.25 \div 7.5) \times 10^{-11-(-5)} \\
 &= 0.3 \times 10^{-6} \\
 &= 3 \times 10^{-7}
 \end{aligned}$$

K A P U R P U T E H

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

