

Solutions to the

Textbook Mid-Unit Review

Page 110

① Write each fraction as a decimal:

a) i) $\frac{1}{33}$

Method 1: $1 \div 33 = 0.\overline{03}$

Method 2: Since $\boxed{99}$ is the special case we studied, we can make 33 Equal to 99!

Whatever to do top, do the bottom!
You the $\frac{1 \times 3}{33 \times 3}$

$\frac{1 \times 3}{33 \times 3} \rightarrow \frac{3}{99} = 0.\overline{03}$ (As predicted by special case)

ii) $\frac{2}{33}$

Method 1: $2 \div 33 = 0.\overline{06}$

Method 2: $\frac{2 \times 3}{33 \times 3} \rightarrow \frac{6}{99} = 0.\overline{06}$

iii) $\frac{3}{33}$

Method 1: $3 \div 33 = 0.\overline{09}$

Method 2: $\frac{3 \times 3}{33 \times 3} \rightarrow \frac{9}{99} = 0.\overline{09}$

b) The pattern observed: When dividing by 33, the decimal is the numerator times 3 divided by 100. And, when the numerator is 99, the repeating decimal is the numerator divided by 100.

c) $0.\overline{15}$ then has to be $\rightarrow \frac{15}{99} \xrightarrow{\div 3} \frac{5}{33}$

$0.\overline{36}$ then HAS to be $\rightarrow \frac{36}{99} \xrightarrow{\div 3} \frac{12}{33}$

② WRITE EACH FRACTION AS A DECIMAL.
REPEATING OR TERMINATING?

a) $\frac{1}{8} = 1 \div 8 = 0.125$ Terminating

b) $\frac{3}{5} = 3 \div 5 = 0.6$ Terminating

c) $\frac{2}{3} = 2 \div 3 = 0.\overline{6}$ Repeating

d) $\frac{7}{13} = 7 \div 13 = 0.\overline{538461}$ Repeating

③ Write each decimal as a fraction

Remember: TO WRITE DECIMAL AS FRACTIONS,
YOU MUST WORK IT OUT SO THAT THE DENOMINATOR
ENDS UP BEING 10, 100, 1000, etc.

a) $0.2 \rightarrow$ move the decimal 1 place
to the right \rightarrow 1 place is 1 zero.
(BASE OF TEN)

$$0.2 \rightarrow \frac{2}{10}$$

b) $0.\overline{8} \rightarrow 0.\overline{88} \rightarrow \frac{88}{100}$
2 spaces = 100

c) $0.\underline{005} \rightarrow 3 \text{ spaces} = 1000 \rightarrow \frac{5}{1000}$

d) $0.\overline{23} \rightarrow 0.\overline{2323} = \frac{2323}{10000}$
4 spaces

④ Order FROM LEAST TO GREATEST

a) $2\frac{1}{4}, \frac{11}{6}, \frac{8}{3}, 2$

$$2\frac{1}{4} = \frac{2 \times 4 + 1}{4} = \frac{9}{4} = 2.25$$

$$\frac{11}{6} = 11 \div 6 = 1.8\bar{3}$$

$$\frac{8}{3} = 8 \div 3 = 2.\bar{6}$$

2

Least

Greatest

$$1.8\bar{3}, 2, 2.25, 2.\bar{6}$$



$$\left[\frac{11}{6}, 2, 2\frac{1}{4}, \frac{8}{3} \right]$$

b) $3.5, \frac{23}{8}, 1\frac{3}{4}$

$$3.5 \rightarrow 3.5$$

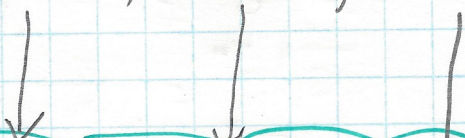
$$\frac{23}{8} \rightarrow 2.875$$

$$1\frac{3}{4} \rightarrow \frac{7}{4} \rightarrow 1.75$$

Least

Greatest

$$1.75, 2.875, 3.5$$



$$\left[1\frac{3}{4}, \frac{23}{8}, 3.5 \right]$$

c) $1.75, \frac{13}{10}, \frac{9}{5}, 1\frac{3}{5}, 1$

$$1.75 \rightarrow 1.75$$

$$\frac{13}{10} \rightarrow 1.3 \quad (13 \div 10)$$

$$\frac{9}{5} \rightarrow 1.8 \quad (9 \div 5)$$

$$1\frac{3}{5} = \frac{8}{5} \rightarrow 1.6 \quad (8 \div 5)$$

1

Least

Greatest

$$1, 1.3, 1.6, 1.75, 1.8$$



$$\left[1, \frac{13}{10}, 1\frac{3}{5}, 1.75, \frac{9}{5} \right]$$

5) Find A NUMBER BETWEEN EACH PAIR OF NUMBERS:

a) $\frac{4}{3}, \frac{5}{3} \Rightarrow \frac{4}{3} = 4 \div 3 = 1.\bar{3}$

$$\frac{5}{3} = 5 \div 3 = 1.\bar{6}$$

So between $1.\bar{3}$ and $1.\bar{6}$

$1.50 \xrightarrow{\text{TO FRACTION}} \frac{50}{100}$
2 places = 100

Simplifies
 $\frac{50}{100} \xrightarrow{\substack{5 \div 5 \\ 10 \div 5}} \frac{1}{2}$

b) $2\frac{3}{8}, \frac{5}{2}$

$$\hookrightarrow 2\frac{3}{8} = \frac{19}{8} = 19 \div 8 = 2.375$$

$$\frac{5}{2} = 2.5$$

So between 2.375 and 2.5

$$\frac{12}{5} = \frac{2 \div 240}{2 \div 100} \rightarrow 2.40 \xrightarrow{2 \text{ places}}$$

c) $1.4, \frac{8}{5} \Rightarrow 1.4$

$$\frac{8}{5} = 8 \div 5 = 1.6$$

So, between 1.4 and 1.6

$$1.5 \xrightarrow{1 \text{ place}} \frac{15 \div 5}{10 \div 5} \rightarrow \frac{3}{2}$$

6. Front-end estimation

a) $32.47 - 6.75 \rightarrow$ 2 places from right to left for both
you line them up by decimal point

$25.72 \rightarrow$ 2 places!

b) $118.234 + 19.287$

When lined up, both have 3 decimal places from the right

$137.521 \rightarrow$ 3 places!

c) $17.9 - 0.8 = 17.1$

↓ 1 place ↓ 1 place

↳ has to be 1 place

⑦ at birth = 0.475 Kg
6 weeks = 4.6 Kg

From week 6 to week 12, she gained 5.19 Kg

a) From birth to 6 months ?

this difference is = Weight at 6 months - Weight at birth

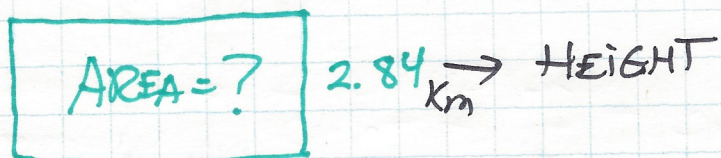
↳ $= (4.6 \text{ Kg}) - (0.475 \text{ Kg})$

$= 4.125 \text{ Kg}$ is how much the dog gained in 6 months

⑧ $9.3 \times 0.8 = 7.44 \rightarrow$ total of 2 decimals, so 2 places from right

$3.62 \times 1.3 = 4.706 \rightarrow$ total of 3 decimals, so 3 places in!

⑨ A Rectangular PARK:



Rectangles have an area = Base × height

$$\text{AREA} = \text{BASE} \times \text{HEIGHT} = (3.5 \text{ Km}) \times (2.84 \text{ Km}) \\ = 9.94 \text{ Km}^2$$

⑩ $15.4 \div 2 = 7.7$

$$1.54 \div 0.2 = 7.7$$

Same!

→ To do this, we must get rid of the point on 0.2 so that it becomes a whole number

$$0.2 \rightarrow 2$$

Because we moved the decimal 1 place on 0.2, 1.54 must also move it 1 place. So

$$1.54 \rightarrow \text{15.4}$$

thus $15.4 \div 2$ is EXACTLY LIKE

$$1.54 \div 0.2$$

⑪ USE BEDMAS

R
A
C
K
E
T
S

X
P
O
N
E
N
T
S

∕
V
I
S
I
O
N

U
L
T
I
P
L
I
C
A
T
I
O
N

D
I
T
I
O
N

U
B
T
R
A
C
T
I
O
N

a) ~~32.41 - 6.~~ $5.9 + 3.7 \times 2.8$

- More than 1 operation: **Yes** → use BEDMAS
- Identify FIRST operation:

$$5.9 + (3.7 \times 2.8)$$

↳ #1 → $3.7 \times 2.8 = 10.36$

• Rewrite

$$5.9 + 10.36 = 16.26$$

b) $12.625 \times (1.873 + 2.127)$

- More than 1 operation: **Yes** → Use Bedmas
- Identify first operation:

$$12.625 \times (1.873 + 2.127)$$

• Rewrite AND SUBSTITUTE ↳ #1 BRACKETS

$$12.625 \times 4$$

↳ 50.5

↳ inside BRACKETS → ADD

$$1.873 + 2.127 = 4$$

$$c) 2.1 \div 0.75 + 6.38 \times 2.45$$

- MORE THAN 1 OPERATION? **YES** → BEDMAS
- IDENTIFY THE FIRST OPERATION

$$2.1 \div 0.75 + 6.38 \times 2.45$$

#1 - Division

BEDMAS
↳ Division is 1st

↓

$$) 2.8 ($$

Rewrite

↓

$$2.8 + 6.38 \times 2.45$$

BEDMAS

Next → Multiplication

↓

$$) 15.63 ($$

Rewrite

↓

$$2.8$$

+

↓

$$15.63$$

$$= \{ 18.43 \}$$