WARM UP GRADE 8

Oct. 1

Test Oct. 7

Show work and find the product or the quotient

1) a) 2.57 x 6.1

$$\begin{array}{r} {\scriptstyle 3\ \ 4} \\ 2.57 \\ \times\ \ 6.1 \\ \hline 257 \\ +\ 1542\,0 \\ \hline 15.677 \end{array}$$

b) $26.73 \div 0.9$ ← Not what

$267.3 \div 9$

$$\begin{array}{r} 29.7 \\ 9\overline{)267.3} \\ -18\downarrow\ \ \downarrow \\ \hline 87 \\ -81\ \ \downarrow \\ \hline 63 \\ -63 \\ \hline 0 \end{array}$$

2) Ted need 15 pieces of fabric that is 3.6 cm long to make ribbons for a local campaign . If the store has 46.8 cm of ribbon, will Ted have enough if he buys it?

$$\begin{array}{r} {\scriptstyle 1} \\ 15 \\ \times 3.6 \\ \hline .90 \\ +\ 45\,0 \\ \hline 54.0 \end{array}$$

Need 54.0cm
and
have 46.8cm
⇒ Not enough

☆1. Use Base Ten Blocks to divide. Record your work on grid paper.

a) 0.8 ÷ 0.1 b) 1.2 ÷ 0.3 c) 2.7 ÷ 0.6 d) 2.2 ÷ 0.4

☆ WS is the Star Questions

a) 8 tenths ÷ 1 tenth = 8

b) 12 tenths ÷ 3 tenths = 4 (4 groups of 3 tenths)

c) 27 tenths ÷ 6 tenths

27 tenths ÷ 3 tenths = 9 groups

so $4\frac{1}{2}$ groups of 6

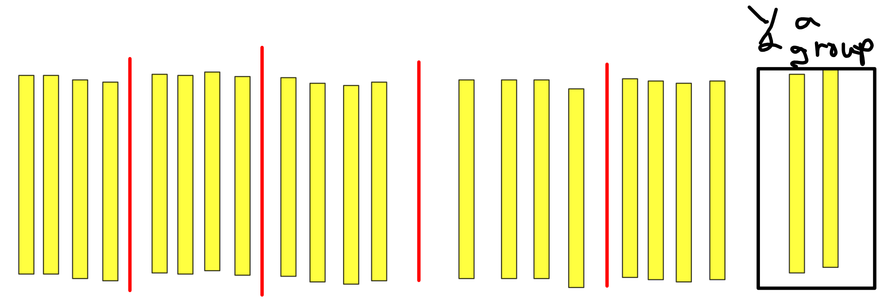
4.5

d) 22 tenths ÷ 4 tenths

20 tenths ÷ 4 tenths = 5

24 tenths ÷ 4 tenths = 6

so 22 tenths ÷ 4 tenths = 5.5



2. Divide. Describe any patterns you see.

a) 124.5 ÷ 10 12.45

124.5 ÷ 100 1.245

124.5 ÷ 1000 0.1245

124.5 ÷ 10 000

0.01245

b) 124.5 ÷ 0.1 1246

124.5 ÷ 0.01 12 450

124.5 ÷ 0.001 124 500

124.5 ÷ 0.0001 1 245 000

3. Why do all these division statements have 6 as the answer?

a) $30 \div 5$ b) $3.0 \div 0.5$ c) $0.3 \div 0.05$ d) $300 \div 50$

Which one is easiest to calculate? Explain.

They are basically the same but the decimals are in different places

a) $30 \div 5 = 6$

b) $3.0 \div 0.5 = 6$

c) $0.3 \div 0.05$ (×100) $= 6$

d) $300 \div 50 = 6$

5. Use paper and pencil to divide.

a) $1.5 \div 0.6$ b) $2.24 \div 0.7$ c) $1.28 \div 0.8$ d) $2.16 \div 0.9$

a) $0.6\overline{)1.5}$ → $6\overline{)15.0}$ → 2.5; 12, 30, 30, 0

b) $0.7\overline{)2.24}$ → $7\overline{)22.4}$ → 3.2; 21, 14, 14, 0

c) $0.8\overline{)1.28}$ → $8\overline{)12.8}$ → 1.6; 8, 48, 48, 0

d) $0.9\overline{)2.16}$ → $9\overline{)21.6}$ → 2.4; 18, 36, 36, 0

☆7) Toonie is 0.2cm thick. How many toonies are in a stack of toonies 17.4cm high?

$0.2 \overline{)17.4} \rightarrow 2 \overline{)174.}$

-16 ↓

14

-14

0

8 7

There is 87 toonies

☆8) Area = $22.32 m^2$
width = 0.8 m
length = ?

$A = L \times w$

$L = \frac{A}{w}$

length = Area ÷ width

length = 22.32 ÷ 0.8

$0.8 \overline{)22.32} \rightarrow 8 \overline{)223.2}$

27.9

-16 ↓

63

56 ↓

72

-72

0

length is 27.9 m

☆9) 0.4kg cost $1.34

a) Estimate 0.4 is close to 0.5kg

so $2 \times 0.5 = 1kg$ thus Estimate cost is $2 \times 1.34 \approx \$2.68$

b) How many 0.4kg are in 1kg ?

$0.4 \overline{)1} \rightarrow 4 \overline{)10.}$

2.5

8

20

-20

0

Need 2.5 bags

2.5 x cost

$$\begin{array}{r} {}^{1}1.{}^{2}34 \\ \times\ 2.5 \\ \hline .670 \\ +2680 \\ \hline 3.350 \end{array}$$

Actual cost for 1kg is $3.35

c) Suppose you spend $10 on oranges. What mass did you buy?

$\_\_ \times 1.34 = \$10$ or

or use calculator

$10 \div 1.34$ (for 0.4 kg)

$= 7.462686567$ (groups of 0.4kg)

$7.462686567 \times 0.4\,kg = 2.985074$

↓

3 kg

10) Fabric length = 9.88m

Alex needs 14 , 0.8m pieces

a) How many 0.8 pieces can Alex cut from the remnant?

$9.88 \div 0.8$

$0.8 \overline{)9.88} \rightarrow$ $8 \overline{)98.80}$

12.35

-8↓

18

-16

28

-24

40

-40

0

12.35 pieces

Alex can get 12.35 out of the fabric (Assume no waste)

b) Will Alex have all the fabric he needs?

NO, he will need more

$14.00 - 12.35 = 1.64$ pieces

1.64×0.8

c) How much more is needed?

$14 \times 0.8 = 11.2$ needed

has 9.88

$11.20 - 9.88 = 1.32$

Need 1.32 m more

Method 2

or

14.00 piece

-12.35 how pcs

1.65 pieces needed

1.65 # of pieces

× 0.8 m length of

1320

Need 1.32 m more

d) Needs 14 , 0.7m pieces of fabric

$0.7 \overline{)9.88} \rightarrow$ $7 \overline{)98.80000000}$

14.114285 7

7

28

28

08

7

10

7

30

28

20

14

60

56

40

35

50

49

10

repeat

Remnant of 9.88m will do 14.1 pieces so yes he will have enough if piece size is 0.7

Method 2

14

× 0.7

9.8 → is needed have 9.88 so yes

11) ___ ÷ ___ = 0.12

a) 3 × 0.12 = 0.36
50

Many answ

0.36 ÷ 3.0 = 0.12

b) 1.3 × 0.12 =

1.3
×0.12
26
130
.156

so

0.156 ÷ 1.3 = 0.12

12) Alicia earned $346.88 in 37.5 hours
How much per hour?

37.5 | 346.88 → 375 | 346.88

9.2501...
3468.80 0 0
-3375
938
750
1880
1875
500

Alicia earns $9.25 per hour

☆13) 237 ÷ 7 = 33.857

33.857...
7 | 237.000
21
27
21
60
56
40
35
50

a) 237 ÷ 0.7
⇓
2370 ÷ 7
⇓
338.57

b) 2.37 ÷ 0.07
⇓
237 ÷ 7
33.857

c) 23.7 ÷ 7
33.857

d) 2370 ÷ 70
237 ÷ 7 = 33.857

NAME _____ DATE _____

Solutions

Decimal Operations Review

1. 180.0 - 37.0 =

$$\begin{array}{r} 180.0 \\ -\ 37.0 \\ \hline 143.0 \end{array}$$

2. 13.9 x 0.75 =

$$\begin{array}{r} 13.9 \\ \times\ .75 \\ \hline .695 \\ +9730 \\ \hline 10.425 \end{array}$$

3. 497.7 ÷ 0.8 =>

4977 ÷ 8

$$\begin{array}{r} 622.125 \\ 8\overline{)4977.000} \\ -48\downarrow \\ \hline -17 \\ -16\downarrow \\ \hline -17 \\ -16\downarrow \\ \hline 10 \\ -8 \\ \hline 20 \\ -16 \\ \hline -40 \\ -40 \\ \hline 0 \end{array}$$

4. 0.94 + 0.7 =

$$\begin{array}{r} 0.94 \\ +\ 0.70 \\ \hline 1.64 \end{array}$$

5. 12.0 x 76.0 =

0 does not use

$$\begin{array}{r} 12.4 \\ \times\ 76. \\ \hline .744 \\ +9680 \\ \hline 1042.4 \end{array}$$

6. 52.14 ÷ 0.5 =

$$\begin{array}{r} 104.28 \\ 5\overline{)521.40} \\ -5\downarrow \\ \hline 02 \\ -0\downarrow \\ \hline 21 \\ -20 \\ \hline 14 \\ -10 \\ \hline 4.00 \\ -4.00 \\ \hline 0 \end{array}$$

7. 6.4 - 5.5 =

$$\begin{array}{r} 6.4 \\ -5.5 \\ \hline 0.9 \end{array}$$

8. 14.3 + 0.7 =

$$\begin{array}{r} 14.3 \\ +\ 0.7 \\ \hline 15.0 \end{array}$$

9. 1.35 x 2.3 =

$$\begin{array}{r} 1.35 \\ \times\ 2.3 \\ \hline .405 \\ +2750 \\ \hline 3.155 \end{array}$$

10. 190.0 x 6.3 =

190 x 6.3

$$\begin{array}{r} 190. \\ \times\ 6.3 \\ \hline 570 \\ +11400 \\ \hline 1197.0 \end{array}$$

11. 180.0 - 16.0 =

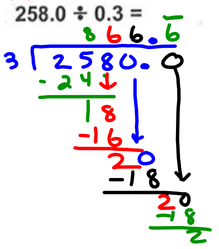
$$\begin{array}{r} 180.0 \\ -\ 16.0 \\ \hline 164.0 \end{array}$$

12. 1.85 + 8.9 =

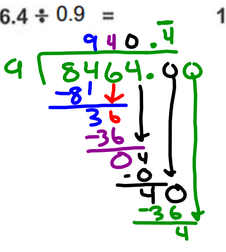
$$\begin{array}{r} 1.85 \\ +\ 8.90 \\ \hline 10.75 \end{array}$$

Solutions

13. 258.0 ÷ 0.3 =

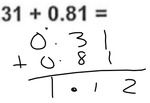


14. 846.4 ÷ 0.9 =

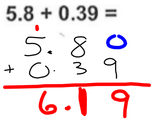


15. 1470.0 ÷ 0.6 =

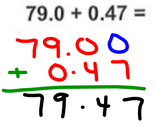
16. 0.31 + 0.81 =



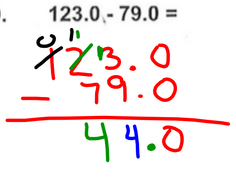
17. 5.8 + 0.39 =



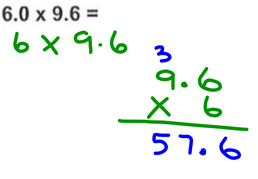
18. 79.0 + 0.47 =



20. 123.0 - 79.0 =



21. 6.0 x 9.6 =



Order of Operations

Does it matter what order we add number in? (Is 7 + 9 the same as 9 + 7)
No, you can add in any order.

Does is matter what order we subtract numbers? (Is 9 - 7 the same as 7 - 9)
Yes it matters what order we subtract.

Does it matter what order we multiply numbers (Is 4 x 6 the same as 6 x 4)
No, you can multiply in any order.

Does it matter what order you divide numbers (Is 50 ÷ 3 the same as 3 ÷ 50)
Yes the order matters with division.

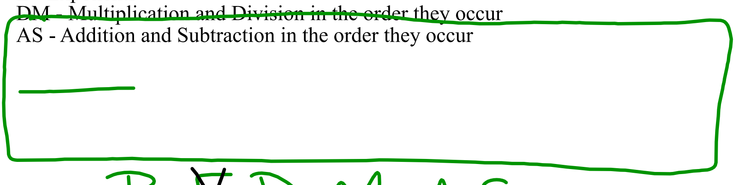
So what if you have a question that contains more than one operation, is there a set order you have to do the question in? 3 + 4 x 6 - 2?

Yes there is definitely a set order you have to do the operations in.

First, you have to do anything that is inside brackets.
Then you simplify any exponents.
Next you multiply or divide in the order they occur from left to right (that is if multiplication is first you do the multiplication, if division comes first you do the division)
Finally, you add or subtract in the order they occur from left to right (that is if the addition comes first, add, if the the subtraction comes first, subtract)

3 + 4 x 6 - 2
3 + 24 - 2
27 - 2 = 25

Sometimes students use the word BEDMAS to help them remember the order
B - Brackets
E - Exponents
DM - Multiplication and Division in the order they occur
AS - Addition and Subtraction in the order they occur



1) 7+(6+3) x 4 ÷ 2

Order of operations with Whole Numbers

BEDMAS

1) $36 \div (4 + 5)$

$= 36 \div 9$

$= 4$

2) $(9-3) \times 8$

$= 6 \times 8$

$= 48$

3) $15 - 6 \times 2 + 10$

$= 15 - 12 + 10$

$= 3 + 10$

$= 13$

4) $(15-6) \times 2$

$= 9 \times 2$

$= 18$

5. $(9+3) \div 4 \div (8-5)$

$= 12 \div 4 \div (8-5)$

$= 12 \div 4 \div 3$

$= 3 \div 3$

$= 1$

6) $20 + 7 \times 3 - (2 + 6)$

$= 20 + 7 \times 3 - 8$

$= 20 + 21 - 8$

$= 41 - 8$

$= 33$

Order of Operations with Decimals

still use BEDMAS

No calculators

1) 6 x 15.9 + 36.4 ÷ 4

= 95.4 + 36.4 ÷ 4

= 95.4 + 9.1

= 104.5

Show work

Step 1

$$\begin{array}{r} {}^{3}\,{}^{5} \\ 15.9 \\ \times\ 6 \\ \hline 95.4 \end{array}$$

Step 2

$$\begin{array}{r} 9.1 \\ 4\overline{)\,36.4} \\ -36\downarrow \\ \hline 04 \\ -4 \\ \hline 0 \end{array}$$

Step 3 Add

$$\begin{array}{r} 95.4 \\ +\ 9.1 \\ \hline 104.5 \end{array}$$

Order of Operations with Decimals

still use BEDMAS

No calculators

show scrap work off to the side

1) $17.92 \div 0.7 + 2.5 \times 3$

$= 25.6 + 2.5 \times 3$

$= 25.6 + 7.5$

$= 33.1$

Step 1) Divide

$17.92 \div 0.7$

$$
\begin{array}{r}
25.6 \\
7 \overline{)179.2} \\
-14\downarrow \\
\hline
39 \\
-35 \\
\hline
42 \\
-42 \\
\hline
0
\end{array}
$$

Step 2) Multiply

$$
\begin{array}{r}
2.5 \\
\times\ 3 \\
\hline
7.5
\end{array}
$$

Step 3) Add

$$
\begin{array}{r}
25.6 \\
+\ 7.5 \\
\hline
33.1
\end{array}
$$

Class/Homework

Start to work on this today BUT we will work on it again tomorrow.

Sheet 30
all questions (No calculators)

Test 2 days time on Integer Multiplication & Decimal Operations