المدرسة الوطنية الأرثوذكسية الشميساني

The National Orthodox School Shmaisani

Worksheet (9) |

Lower Secondary Stage (6-8)

1st Semester | 2023-2024

Subject: Math
Name: _____
Objective:
- **To revise the covered material of the first semester.**

Chapter: (1, 6, 9, 11)
Grade 6 CS

Negative numbers.

Remember.

In **adding** and **subtracting** negative numbers:

- **Same** signs ⇨ **add** the numbers and put the **common** sign.

  Example: -2 + -4 = -6

- **Different** signs ⇨ **subtract** the numbers and the **sign** of the **answer** is according to the **sign** of the **bigger** number.

  Example: -8 + 5 = -3

- When you have **two negative** signs (- -) ⇨ **turn** the sign to **positive** (+).

  Example: (4 – – 6 it will be 4 + 6 = 10)

In **multiplying** and **dividing** numbers:

- if you have **same** signs (+ +) or (- -) ⇨ The sign of the **answer** is **positive** (+)

  Example: - 2 × - 5 = 10

- If you have **different** signs (+ -) ⇨ The sign of the **answer** is **negative** (-)

  Example: -3 × 9 = -27

Exercise (1): Workout:

a) $(-10)(-5) = -15$

b) $(-26)(+20) = -6$

c) $40 - 50 = -10$

d) $-2 \times 5 = -10$

e) $+3 \times +5 = 15$

f) $4 \times -6 = -24$

g) $+54 \div +9 = 6$

h) $21 \div -3 = -7$

i) $+36 \div +4 = 9$

j) $2.36 - 4.03 =$

$$\begin{array}{r} 4.013 \\ -\ 2.36 \\ \hline -1.67 \end{array}$$

k) $10.2 - 8.005 =$

$$\begin{array}{r} 10.200 \\ -\ 8.005 \\ \hline 2.195 \end{array}$$

l) $(-4.5)(-6.81) =$

$$\begin{array}{r} 4.50 \\ +\ 6.81 \\ \hline 11.31 \end{array}$$

m) $-13.22 - 5.014 =$

$$\begin{array}{r} 13.220 \\ -\ 5.014 \\ \hline -8.206 \end{array}$$

n) $12.5 \times 5 =$

$$\begin{array}{r} 12.5 \\ \times\ \ 5 \\ \hline 62.5 \end{array}$$

o) $8.521 \times 7 =$

$$\begin{array}{r} 8.521 \\ \times\ \ 7 \\ \hline 59.647 \end{array}$$

p) $258.1 \times 3 =$

$$\begin{array}{r} 258.1 \\ \times\ \ 3 \\ \hline 774.3 \end{array}$$

q) $2.58 \div 3 =$

$$3\overline{)2.58} = 0.86$$

r) $0.081 \div 9 =$

$$9\overline{)0.081} = 0.009$$

s) $13.25 \div 5 =$

$$5\overline{)13.25} = 2.65$$

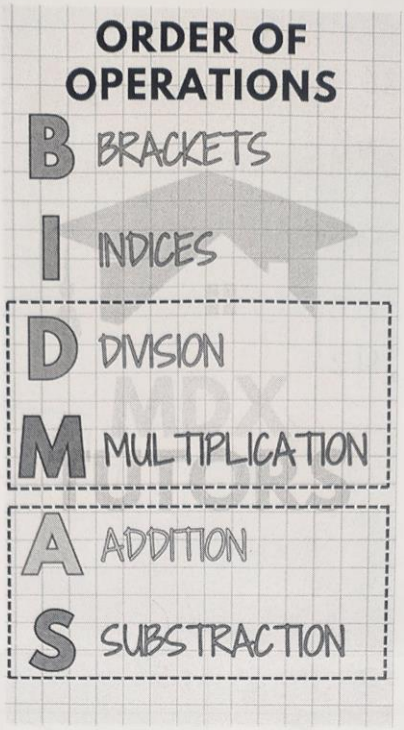
t) $6.514 + 5.1 =$

$$\begin{array}{r} 6.514 \\ +\ 5.100 \\ \hline 11.614 \end{array}$$

u) $14.05 - 8.55 =$

$$\begin{array}{r} 14.05 \\ -\ 8.55 \\ \hline 5.50 \end{array}$$

Page 2 of 8



Exercise (2): Workout.

a) $2 + 15 \div 3 - 10 + 3^2$

3x3

$2+15\div3-10+9$

$2+5-10+9$

$7-10+9$

$-3+9 = \boxed{6}$

b) $10 - 20 + (5^2 \div 5)$

5x5

$10-20+(25\div5)$

$10-20+5$

$-10+5 = \boxed{-5}$

c) $2 \times 3 \times 2 + (2 - 10) + \sqrt{64}$

$2\times3\times2+(2-10)+8$

$2\times3\times2-8+8$

$12-8+8$

$4+8$

$\boxed{12}$

d) $\sqrt{49} + 4^2 - 10 \times 5$

4x4

$7+4^2-10\times5$

$7+16-10\times5$

$7+16-50$

$23-50$

$\boxed{-27}$

Page 3 of 8

a) Find the HCF of:

36: 1, 2, 3, 4, 6, 9, 12, 18, 36

48: 1, 2, 3, 4, 6, 8, 12, 16, 48

HCF: 12

b) Find the LCM of:

6: 6, 12, 18, 24, 30, 36, 42

9: 9, 18, 27, 36, 45, 54, 63

12: 12, 24, 36, 48, 60

LCM. 36

c) Check the divisibility.

	÷ 2	÷ 3	÷ 5	÷ 6	÷ 9
25110	✓	✓	✓	✓	✓
152	✓	X	X	X	X
749	X	X	X	X	X

d) Workout.

1) 6^2 → 36

2) $\sqrt{36}$ → 6

3) 16^2 → 256

4) $\sqrt{361}$ → 19

5) 11^2 → 121

6) $\sqrt{196}$ → 14

Page 4 of 8

Adding fractions

Same denominators

Multiplying fractions

No need for same denominators

Try to **simplify** the fraction first

Then multiply.

Dividing fractions

Keep change flip

Exercise (4): Workout.

a) $6\frac{2}{7} + 3\frac{11}{21}$

$9 + \frac{6}{21} + \frac{11}{21}$

$9 + \frac{17}{21} \Rightarrow \boxed{9\ \frac{17}{21}}$

b) $9\frac{11}{13} + 7\frac{5}{9}$

$16 + \frac{99}{117} + \frac{65}{117}$

$16 + \frac{164}{117} \Rightarrow 16 + 1\frac{47}{117} \Rightarrow \boxed{17\ \frac{47}{117}}$

c) $\frac{48}{50} \times \frac{35}{54}$

$\frac{8}{10} \times \frac{7}{9} \Rightarrow \frac{8}{10} \times \frac{7}{9} \Rightarrow \frac{4}{5} \times \frac{7}{9} = \boxed{\frac{28}{45}}$

d) $\frac{17}{63} \times \frac{49}{51}$

$\frac{1}{9} \times \frac{7}{3} = \boxed{\frac{7}{27}}$

e) $\frac{3}{5} \div \frac{15}{20}$

$\frac{3}{5} \times \frac{20}{15} = \boxed{\frac{4}{5}}$

f) $2\frac{1}{6} \div 3\frac{2}{5} \Rightarrow \frac{13}{6} \div \frac{17}{5}$ (Keep change flip)

$\frac{13}{6} \times \frac{5}{17} = \boxed{\frac{65}{102}}$

g) $\frac{4}{5} + \frac{18}{45} \times \frac{14}{21} + \frac{13}{15}$

$\frac{4}{5} + \left(\frac{6}{45} \times \frac{14}{7}\right) + \frac{13}{15}$

$\frac{4}{5} + \left(\frac{6}{45} \times \frac{2}{1}\right) + \frac{13}{15}$

$\frac{4}{5} + \frac{12}{45} + \frac{13}{15}$

$\frac{36}{45} + \frac{12}{45} + \frac{39}{45} = \frac{87}{45} = \boxed{1\ \frac{14}{15}}$

h) $\left(\frac{5}{8}\right)^2 \times \frac{16}{25} + \frac{7}{8}$

$\frac{25}{64} \times \frac{16}{25} + \frac{7}{8}$

$\frac{1}{4} + \frac{7}{8}$

$\frac{2}{8} + \frac{7}{8} = \frac{9}{8} = \boxed{1\ \frac{1}{8}}$

Page 5 of 8

Fractions, decimals and percentages.

Exercise (5): Workout.

Fraction	Decimal	Percentage
$\frac{3}{8} \times \frac{12.5}{12.5} = \frac{37.5}{100}$	0.375	37.5 %
$5\frac{1}{100}$	5.01	501 %
$\frac{1}{100}$	0.01	1 %
$3\frac{7}{50} \times \frac{2}{2} = 3\frac{14}{100}$	3.14	314 %
$6\frac{35}{100}$	6.35	635 %

Exercise (6): Workout.

a) 60% of 35

$\frac{3}{5} \times \frac{35}{1}$

21

b) 55% of 75

$\frac{55}{100} \times \frac{75}{1}$

$\frac{4125}{100} = 41.25$

c) 11% of 6.4

$\frac{11}{100} \times \frac{6.4}{1}$

$\frac{70.4}{100} = 0.704$

d) 99% of 140

$\frac{99}{100} \times \frac{140}{1}$

$\frac{13860}{100} = 138.6$

e) 2% of 2.20

$\frac{2}{100} \times \frac{2.2}{1}$

$\frac{4.4}{100} = 0.044$

f) 30% of 5.80

$\frac{30}{100} \times \frac{5.8}{1}$

$\frac{174}{100} = 1.74$

Page 6 of 8

Ratio.

Exercise (7): Simplify the ratios.

a) $(15 : 55) \div 5$

$3 : 11$

b) $(220 : 120) \div 2$

$11 : 6$

c) $(32 : 16 : 64) \div 16$

$2 : 1 : 4$

d) $\frac{2n}{7n} : \frac{10}{14}$

$\frac{4}{14} : \frac{10}{14}$

$(4 : 10) \div 2$

$(2 : 5)$

e) $\frac{4}{5} : \frac{1}{5}$ $= 4 : 1$

f) $15 : 35 : 5$ $\div 5$

$3 : 7 : 1$

Share in a given ratio.

Exercise (8):

Share.

a) \$55 in the ratio 2 : 3

① $2 + 3 = 5$

② One part $= 55 \div 5 = 11$

③ $2 \times 11 = \$22$

$3 \times 11 = \$33$

b) \$360 in the ratio 5 : 4

① $5 + 4 = 9$

② One part $= 360 \div 9 = 40$

③ $5 \times 40 = \$200$

$4 \times 40 = \$160$

c) 8.40 cm in the ratio 6 : 2

① $6 + 2 = 8$

② $8.4 \div 8 = 1.05$

③ $6 \times 1.05 = 6.3$ cm

$2 \times 1.05 = 2.1$ cm

d) 45.2 km in the ratio 1 : 4

① $4 + 1 = 5$

② One part $= 45.2 \div 5 = 9.04$

③ $1 \times 9.04 = 9.04$ km

$4 \times 9.04 = 36.16$ km

Page 7 of 8

Exercise (9): Answer the following questions.

1) We carried out a traffic survey at school. Of the 48 vehicles $\frac{1}{3}$ were bikes, $\frac{1}{4}$ were vans, how many were cars?

Bike : $\frac{1}{3} \times 48 = 16$

Van : $\frac{1}{4} \times 48 = 12$

$\Rightarrow 16 + 12 = 28$ / Cars : $48 - 28 =$ **20**

2) A box holds $1\frac{1}{2}$ kg of nails. What weight of nails do seven such boxes hold?

1 box → $1\frac{1}{2}$ kg.

7 boxes → ?

$7 \times 1\frac{1}{2} \Rightarrow \frac{7}{1} \times \frac{3}{2} = \frac{21}{2} =$ **$10\frac{1}{2}$ kg**

3) Peter scored 14 out of 20 in Math test. He scored 17 out of 25 in an English test.

Which was the better mark

Math

$\frac{14 \times 5}{20 \times 5} = \frac{70}{100} = 70\%$ >

English

$\frac{17 \times 4}{25 \times 4} = \frac{68}{100} = 68\%$

Math is better.

4) Share the following between Anton and Sara:

a) 20 marbles in the ratio 3 : 2

① $2 + 3 = 5$

② $20 \div 5 = 4$

③ Anton : $3 \times 4 = 12$ marbles

Sara : $2 \times 4 = 8$ marbles.

b) 36 biscuits in the ratio 4 : 5

① $4 + 5 = 9$

② one part $= 36 \div 9 = 4$

③ Anton : $4 \times 4 = 16$ biscuits

Sara : $5 \times 4 = 20$ biscuits.