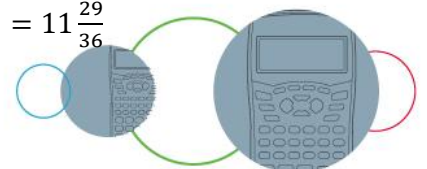


SHARP

Worksheet 3 Memorandum: Common Fractions

Grade 9 Mathematics

1. a) $-6\frac{2}{5} \times 3 \div 2\frac{2}{4}$
 $= \frac{-32}{5} \times \frac{3}{1} \div \frac{10}{4}$
 $= \frac{-32}{5} \times \frac{3}{1} \times \frac{4}{10}$
 $= \frac{-16}{5} \times \frac{3}{1} \times \frac{4}{5}$
 $= \frac{-192}{25}$
 $= -7\frac{17}{25}$
- b) $\left(-\frac{11}{2}\right)^2 + \sqrt{2\frac{7}{9}}$
 $= \frac{121}{4} + \sqrt{\frac{25}{9}}$
 $= \frac{121}{4} + \frac{5}{3}$
 $= \frac{363}{12} + \frac{20}{12}$
 $= \frac{383}{12}$
 $= 31\frac{11}{12}$
- c) $-4\frac{1}{5} \times \left(-\frac{15}{6}\right) \div 3\frac{2}{3}$
 $= \frac{-21}{5} \times \frac{-15}{6} \div \frac{11}{3}$
 $= \frac{-21}{1} \times \frac{-3}{6} \times \frac{3}{11}$
 $= \frac{-7}{1} \times \frac{-3}{2} \times \frac{3}{11}$
 $= \frac{63}{22}$
 $= 2\frac{19}{22}$
- d) $\sqrt[3]{\frac{1}{64}} + \left(\frac{-1}{4}\right)^3$
 $= \frac{1}{4} + \left(-\frac{1}{64}\right)$
 $= \frac{16}{64} - \frac{1}{64}$
 $= \frac{15}{64}$
- e) $-2\frac{3}{7} + 1\frac{8}{5} - \left(-1\frac{3}{5}\right)$
 $= \frac{-17}{7} + \frac{13}{5} + \frac{8}{5}$
 $= \frac{-85}{35} + \frac{91}{35} + \frac{56}{35}$
 $= \frac{62}{35}$
 $= 1\frac{27}{35}$
- f) $\left(-\frac{4}{5}\right)^2 + \frac{14}{3} \times \left(-3\frac{6}{7}\right)$
 $= \frac{16}{25} + \left(\frac{14}{3} \times \frac{-27}{7}\right)$
 $= \frac{16}{25} + \left(\frac{2}{1} \times \frac{-9}{1}\right)$
 $= \frac{16}{25} - 18$
 $= -17\frac{9}{25}$
- g) $3\frac{2}{11} \times \left(-\frac{1}{12} + 4\frac{1}{4}\right)$
 $= \frac{35}{11} \times \left(-\frac{1}{12} + \frac{17}{4}\right)$
 $= \frac{35}{11} \times \left(\frac{-1}{12} + \frac{51}{12}\right)$
 $= \frac{35}{11} \times \frac{50}{12}$
 $= \frac{35}{11} \times \frac{25}{6}$
 $= \frac{875}{66}$
 $= 13\frac{17}{66}$
- h) $\sqrt{4\frac{21}{25}} + \sqrt[3]{3\frac{3}{8}}$
 $= \sqrt{\frac{121}{25}} + \sqrt[3]{\frac{27}{8}}$
 $= \frac{11}{5} + \frac{3}{2}$
 $= \frac{22}{10} + \frac{15}{10}$
 $= \frac{37}{10}$
 $= 3\frac{7}{10}$
- i) $4\frac{4}{5} \times 5\frac{7}{9} \div 6\frac{8}{9}$
 $= \frac{24}{5} \times \frac{52}{9} \div \frac{62}{9}$
 $= \frac{8}{5} \times \frac{52}{3} \times \frac{9}{62}$
 $= \frac{4}{5} \times \frac{52}{1} \times \frac{3}{31}$
 $= \frac{624}{155}$
 $= 4\frac{4}{155}$
- j) $\left(\frac{3}{4}\right)^3 + \left(\frac{5}{8}\right)^2$
 $= \frac{27}{64} + \frac{25}{64}$
 $= \frac{810}{72} + \frac{104}{72} - \frac{64}{72}$
 $= \frac{850}{72}$
- k) $5\frac{3}{7} \div 2\frac{10}{14}$
 $= \frac{38}{7} \div \frac{38}{14}$
 $= \frac{52}{64}$
 $= \frac{13}{16}$
 $= 2$
- l) $\frac{90}{8} + 1\frac{4}{9} - \frac{16}{18}$
 $= \frac{90}{8} + \frac{13}{9} - \frac{16}{18}$
 $= \frac{38}{7} \times \frac{14}{38}$
 $= \frac{1}{1} \times \frac{2}{1}$
 $= 11\frac{58}{72}$
 $= 11\frac{29}{36}$



$$\begin{aligned}
 \text{m)} \quad & \sqrt{\frac{1}{4} + \frac{4}{9}} \\
 &= \sqrt{\frac{9}{36} + \frac{16}{36}} \\
 &= \sqrt{\frac{25}{36}} \\
 &= \frac{5}{6}
 \end{aligned}$$

$$\begin{aligned}
 \text{n)} \quad & \sqrt[3]{\frac{133}{64} - \frac{1}{8}} \\
 &= \sqrt[3]{\frac{133}{64} - \frac{8}{64}} \\
 &= \sqrt[3]{\frac{125}{64}} \\
 &= \frac{5}{4} \\
 &= 1\frac{1}{4}
 \end{aligned}$$

$$\begin{aligned}
 \text{o)} \quad & \left(-\frac{45}{8}\right) \times \left(\frac{4}{5}\right)^2 \div \frac{12}{7} \\
 &= -\frac{45}{8} \times \frac{16}{25} \times \frac{7}{12} \\
 &= -\frac{9}{1} \times \frac{2}{5} \times \frac{7}{12} \\
 &= -\frac{3}{1} \times \frac{1}{5} \times \frac{7}{2} \\
 &= -\frac{21}{10} \\
 &= -2\frac{1}{10}
 \end{aligned}$$

$$\begin{aligned}
 \text{p)} \quad & 7\frac{9}{11} + 5\frac{1}{4} - 3\frac{3}{8} \\
 &= (7 + 5 - 3) + \left(\frac{9}{11} + \frac{1}{4} - \frac{3}{8}\right) \\
 &= 9 + \left(\frac{72}{88} + \frac{22}{88} - \frac{33}{88}\right) \\
 &= 9 + \frac{61}{88} \\
 &= 9\frac{61}{88}
 \end{aligned}$$

$$\begin{aligned}
 2. \quad \text{a)} \quad & 6\frac{9}{11} = \frac{75}{11} \\
 \text{d)} \quad & 4\frac{5}{6} = \frac{29}{6} \\
 \text{g)} \quad & 9\frac{1}{6} = \frac{55}{6} \\
 \text{j)} \quad & 9\frac{8}{11} = \frac{107}{11}
 \end{aligned}$$

$$\begin{aligned}
 \text{b)} \quad & 25\frac{3}{100} = \frac{2503}{100} \\
 \text{e)} \quad & 15\frac{3}{6} = \frac{93}{6} = \frac{31}{2} \\
 \text{h)} \quad & 9\frac{3}{15} = \frac{138}{15} = \frac{46}{5} \\
 \text{k)} \quad & 5\frac{6}{12} = \frac{66}{12} = \frac{11}{2}
 \end{aligned}$$

$$\begin{aligned}
 \text{c)} \quad & 8\frac{2}{25} = \frac{202}{25} \\
 \text{f)} \quad & 5\frac{8}{14} = \frac{78}{14} = \frac{39}{7} \\
 \text{i)} \quad & 6\frac{7}{9} = \frac{61}{9} \\
 \text{l)} \quad & 7\frac{1}{4} = \frac{29}{4}
 \end{aligned}$$

$$\begin{aligned}
 3. \quad \text{a)} \quad & \frac{19}{7} = 2\frac{5}{7} \\
 \text{d)} \quad & \frac{90}{11} = 8\frac{2}{11} \\
 \text{g)} \quad & \frac{66}{15} = 4\frac{6}{15} = 4\frac{2}{5} \\
 \text{j)} \quad & \frac{56}{7} = 8
 \end{aligned}$$

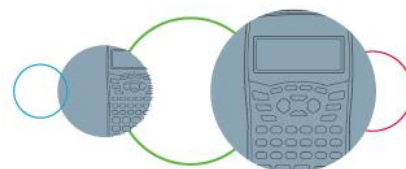
$$\begin{aligned}
 \text{b)} \quad & \frac{92}{6} = 15\frac{2}{6} = 15\frac{1}{3} \\
 \text{e)} \quad & \frac{48}{9} = 5\frac{3}{9} = 5\frac{1}{3} \\
 \text{h)} \quad & \frac{59}{5} = 11\frac{4}{5} \\
 \text{k)} \quad & \frac{30}{4} = 7\frac{2}{4} = 7\frac{1}{2}
 \end{aligned}$$

$$\begin{aligned}
 \text{c)} \quad & \frac{81}{8} = 10\frac{1}{8} \\
 \text{f)} \quad & \frac{31}{4} = 7\frac{3}{4} \\
 \text{i)} \quad & \frac{31}{9} = 3\frac{4}{9} \\
 \text{l)} \quad & \frac{84}{8} = 10\frac{4}{8} = 10\frac{1}{2}
 \end{aligned}$$

$$\begin{aligned}
 4. \quad \text{a)} \quad & \frac{7}{10} = \frac{28}{40} \\
 \text{e)} \quad & \frac{7}{20} = \frac{35}{100}
 \end{aligned}$$

$$\begin{aligned}
 \text{b)} \quad & \frac{36}{54} = \frac{6}{9} \\
 \text{f)} \quad & \frac{81}{45} = \frac{9}{5} \\
 \text{c)} \quad & \frac{2}{9} = \frac{14}{63} \\
 \text{g)} \quad & \frac{3}{12} = \frac{21}{84}
 \end{aligned}$$

$$\begin{aligned}
 \text{d)} \quad & \frac{3}{5} = \frac{15}{25} \\
 \text{h)} \quad & \frac{3}{8} = \frac{9}{24}
 \end{aligned}$$



5.

Fraction	Decimal	Percentage
$\frac{77}{100}$	0.77	77%
$\frac{44}{100} = \frac{11}{25}$	0.44	44%
$\frac{467}{1000}$	0.467	46.7%
$\frac{36}{50}$	0.72	72%
$\frac{94}{100} = \frac{47}{50}$	0.94	94%
$\frac{125}{100} = 1\frac{1}{4}$	1.25	125%

6.

Percentage	82%	27%	95%	32%	60%
a)	$\frac{82}{100} = \frac{41}{50}$	$\frac{27}{100}$	$\frac{95}{100} = \frac{19}{20}$	$\frac{32}{100} = \frac{8}{25}$	$\frac{60}{100} = \frac{3}{5}$
b)	$\frac{50}{50} - \frac{41}{50} = \frac{9}{50}$	$\frac{100}{100} - \frac{27}{100} = \frac{73}{100}$	$\frac{20}{20} - \frac{19}{20} = \frac{1}{20}$	$\frac{25}{25} - \frac{8}{25} = \frac{17}{25}$	$\frac{5}{5} - \frac{3}{5} = \frac{2}{5}$
c)	$0.82 \times 25 = 20\frac{1}{2} = 21$	$0.27 \times 25 = 6\frac{3}{4} = 7$	$0.95 \times 25 = 23\frac{3}{4} = 24$	$0.32 \times 25 = 8$	$0.6 \times 25 = 15$

7. a) $\frac{7}{8} \times \frac{1}{2} + \frac{2}{5}$
 $= \frac{7}{16} + \frac{2}{5}$
 $= \frac{35}{80} + \frac{32}{80}$
 $= \frac{67}{80}$

b) i) $\frac{300}{1} \times \frac{7}{8} = \frac{75}{1} \times \frac{7}{2} = \frac{525}{2} = R262,50$

ii) $\frac{300}{1} \times \frac{67}{80} = \frac{15}{1} \times \frac{67}{4} = \frac{1005}{4} = R251,25$

iii) $(300 - 262.5) + (300 - 251.25) = 37,50 + 48,75 = R86,25 \text{ left}$

8. $\frac{12}{1} \times \frac{5}{9} = \frac{4}{1} \times \frac{5}{3} = \frac{20}{3} = 6\frac{2}{3}$

$\therefore$ you need 7 pizzas (cant order $\frac{2}{3}$ of a pizza) and you will have $\frac{1}{3}$ of a pizza left over.

