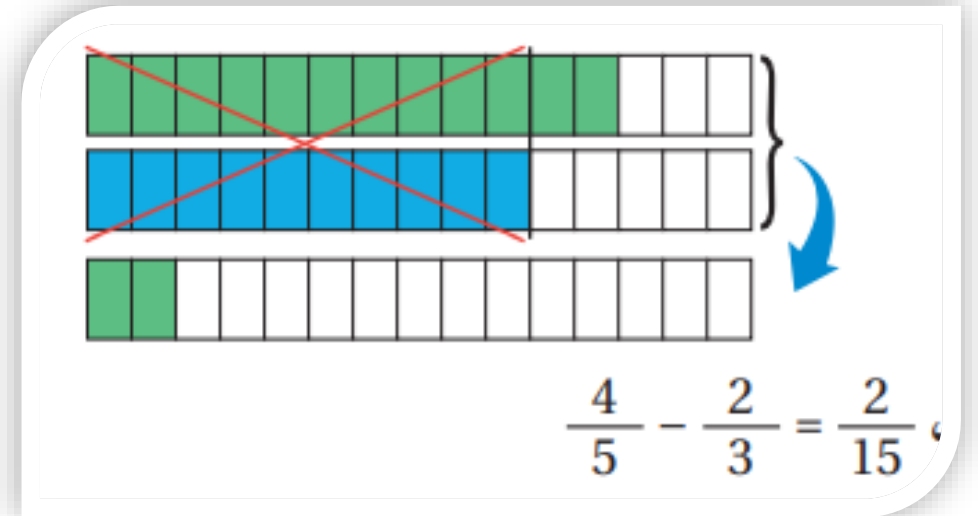


العمليات على الكسور و الأعداد الكسرية

الصف : السادس



جمع الكسور و الأعداد الكسرية و طرحها

أجد ناتج كل مما يأتي في أبسط صورة:

* مضاعفات الـ 12
12, 24, **36**, 48, ...

* مضاعفات الـ 21

21, **42**, 63, ...

$$1 \quad \frac{1 \times 9}{2 \times 9} + \frac{7 \times 2}{9 \times 2} = \frac{23}{18} = \frac{15}{18}$$

$$4 \quad \frac{3 \times 5}{4 \times 5} + \frac{3 \times 2}{10 \times 2} = \frac{15 + 6}{20} = \frac{21}{20}$$

$$= 1 \frac{1}{20}$$

$$2 \quad \frac{19 \times 2}{21 \times 2} - \frac{5 \times 7}{6 \times 7} = \frac{3}{42} = \frac{1}{14}$$

$$5 \quad \frac{11 \times 2}{28 \times 2} - \frac{3 \times 7}{8 \times 7} = \frac{22}{56} - \frac{21}{56} = \frac{1}{56}$$

$$= \frac{1}{56}$$

$$3 \quad \frac{7 \times 3}{12 \times 3} - \frac{4 \times 4}{9 \times 4} = \frac{5}{36}$$

$$6 \quad \frac{5 \times 2}{6 \times 2} + \frac{1 \times 3}{4 \times 3} = \frac{13}{12} = 1 \frac{1}{12}$$

$$= 1 \frac{1}{12}$$

أتحقق من فهمي:



ضمانات الـ 10

10
20
30
40

2 $2 \frac{3 \times 3}{10 \times 3} - 1 \frac{5 \times 5}{6 \times 5}$

استخرج
 $2 \frac{9}{30} - 1 \frac{25}{30}$

$= 1 \frac{30}{30} + \frac{9}{30} - 1 \frac{25}{30}$

$= 1 \frac{39}{30} - 1 \frac{25}{30}$

$= \frac{14 \div 2}{30 \div 2} = \frac{7}{15}$

$\left[\begin{array}{c} a \\ b \\ c \end{array} \right]^+$

قاعدة الاستخراج

$\rightarrow \left[\begin{array}{c} 3 \\ 7 \\ 11 \end{array} \right]^+ \Rightarrow 2 \frac{18}{11}$

3 $10 \frac{5 \times 5}{6 \times 5} - 7 \frac{3 \times 3}{10 \times 3}$

$= 10 \frac{25}{30} - 7 \frac{9}{30}$

$= 3 \frac{16 \div 2}{30 \div 2}$

$= 3 \frac{8}{15}$

أجد ناتج كل مما يأتي في أبسط صورة:

1) $1\frac{1^{\times 4}}{6^{\times 1}} + 2\frac{3^{\times 3}}{8^{\times 3}}$

3) $32 + 15\frac{16}{17}$

1) $= 1\frac{4}{24} + 2\frac{9}{24}$
 $= 3\frac{13}{24}$

3) $47\frac{16}{17}$

2) $2\frac{1^{\times 2}}{14^{\times 2}} - \frac{3^{\times 7}}{4^{\times 7}}$

14 : 14, 28, 42, ...

4) $9\frac{1^{\times 5}}{8^{\times 5}} + \frac{3^{\times 4}}{10^{\times 4}} = 9\frac{5}{40} + \frac{12}{40}$
 $= 9\frac{17}{40}$

2) $2\frac{2}{28} - \frac{21}{28}$
 الاستخفاف
 $= 1\frac{30}{28} - \frac{21}{28}$
 $= 1\frac{9}{28}$

$2\frac{2}{28} = 1\frac{28}{28} + \frac{2}{28}$
 $= 1\frac{30}{28}$

$$5) \quad 2 \frac{3^{\times 7}}{7^{\times 7}} + 11 \frac{30}{49}$$

$$6) \quad 65 + 100 \frac{1}{2} = 165 \frac{1}{2}$$

$$7) \quad 3 \frac{2^{\times 4}}{9^{\times 4}} - 2 \frac{1^{\times 3}}{12^{\times 3}}$$

$$8) \quad 20 - 8 \frac{1}{3}$$

$$5) \quad 2 \frac{21}{49} + 11 \frac{30}{49}$$

$\left[13 \frac{51}{49} \right] - = 14 \frac{2}{49}$

$$7) \quad 3 \frac{8}{36} - 2 \frac{3}{36}$$

$= 1 \frac{5}{36}$

$13 + 1 \frac{2}{49}$

$$8) \quad 19 \frac{3}{3} - 8 \frac{1}{3}$$

$= 11 \frac{2}{3}$

مُخْتَبَرَاتٌ: في مُخْتَبَرِ الْمَدْرَسَةِ سِلْكٌ حَرَارِيٌّ طَوْلُهُ $3\frac{1}{4}$ m

اسْتَعْمَلَ طَلَبَةُ الصَّفِّ السَّادِسِ $1\frac{5}{6}$ m مِنْهُ فِي إِحْدَى التَّجَارِبِ.

كَمْ مِتْرًا بَقِيَ مِنَ السِّلْكِ؟



الاستلاف

$$= 2\frac{12}{12} + \frac{3}{12} - 1\frac{10}{12}$$

$$= 2\frac{15}{12} - 1\frac{10}{12}$$

$$= 1\frac{5}{12} \text{ m}$$

$$= 3\frac{1 \times 3}{4 \times 3} - 1\frac{5 \times 2}{6 \times 2}$$

$$= 3\frac{3}{12} - 1\frac{10}{12}$$

طَحِينٌ: اسْتَعْمَلَ خَبَازٌ $10\frac{8}{9}$ kg مِنَ الطَّحِينِ الْأَبْيَضِ، وَ $20\frac{5}{6}$ kg مِنَ الطَّحِينِ

الْأَسْمَرَ لِصُنْعِ مَخْبُوزَاتِهِ. مَا كَمِّيَّةُ الطَّحِينِ الَّتِي اسْتَعْمَلَهَا الْخَبَازُ؟

$$= 10\frac{8 \times 2}{9 \times 2} + 20\frac{5 \times 3}{6 \times 3}$$

$$= 10\frac{16}{18} + 20\frac{15}{18}$$

$$= 30\frac{31}{18}$$

$$= 31\frac{13}{18} \text{ kg}$$

تحليل

$$30 + 1\frac{13}{18}$$

$$= 31\frac{13}{18}$$

هندسة: أجد محيط مستطيل طوله $5\frac{3}{7}$ cm وعرضه $3\frac{1}{2}$ cm

المحيط مجموع الأضلاع
الآن نحل



الطول
العرض

$$= 5\frac{3}{7} \times 2 + 3\frac{1}{2} \times 2 + 3\frac{1}{2} \times 2 + 5\frac{3}{7} \times 2$$

$$= 16\frac{26}{14}$$

$$= 17\frac{12}{14} \text{ cm}$$

or

$$= 2 * (5\frac{3}{7} + 3\frac{1}{2})$$

$$= 2 * 8\frac{13}{14}$$

$$= 2 * \frac{125}{14} = \frac{250}{14}$$

$$= 17\frac{12}{14}$$

تَحَدُّ: أَجِدُ نَاتِجَ كُلِّ مِمَّا يَأْتِي فِي أَبْسَطِ صَوْرَةٍ:

$$15 \quad 1 \frac{1^{\times 2}}{8^{\times 2}} + 3 \frac{5}{16} + 2 \frac{1^{\times 4}}{4^{\times 4}}$$

$$= \boxed{6 \frac{11}{36}}$$

$$16 \quad 2 \frac{8^{\times 4}}{9^{\times 4}} - 1 \frac{3^{\times 6}}{6^{\times 6}} + 1 \frac{13}{36}$$

$$= 1 \frac{14}{36} + 1 \frac{13}{36}$$

$$= 2 \frac{27 \div 9}{36 \div 9}$$

$$= \boxed{2 \frac{3}{4}}$$

ضرب الكسور و الأعداد الكسرية و قسمتها

أجدُ ناتجَ كُلِّ مِمَّا يَأْتِي فِي أبْسَطِ صُورَةٍ:

$$1 \quad \frac{6}{7} \times \frac{5}{12} = \frac{1}{7} * \frac{5}{2} = \frac{5}{14}$$

$$3 \quad \frac{7}{100} \times \frac{25}{49} = \frac{1}{4} * \frac{1}{7} = \frac{1}{28}$$

$$2 \quad \frac{2}{27} \times \frac{18}{21} = \frac{2}{3} * \frac{2}{7} = \frac{4}{21}$$

5 $\frac{6}{19} \times \frac{3}{42} \div 6 = \frac{1}{19} * \frac{3}{7}$
 $= \frac{3}{133}$

7 $\frac{21}{36} \times \frac{24}{35} \div 7$
 $6 \div$

$= \frac{3}{6} * \frac{4}{7} =$

$\frac{1}{2} * \frac{4}{7} \div 2 =$

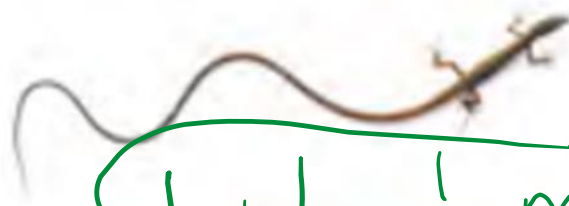
$\frac{1}{1} * \frac{2}{7} = \frac{2}{7}$

6 $\frac{5}{48} \times \frac{32}{33} \div 8 = \frac{5}{6} * \frac{4}{33} \div 2$
 $= \frac{5}{3} * \frac{2}{33} = \frac{10}{99}$

8 $\frac{9}{13} \times \frac{13}{81} \div 9$

$= \frac{1}{1} * \frac{1}{9}$

$= \frac{1}{9}$



طَبِيعَةً: سِخْلِيَّةُ الْعُشْبِ الْأَسْيَوِيَّةُ طَوْلُ جَسَدِهَا $\frac{1}{3}$

طَوْلِ ذَيْلِهَا. إِذَا كَانَ طَوْلُ ذَيْلِهَا $\frac{1}{4}$ m، فَكَمْ يَبْلُغُ طَوْلُ

جَسَدِهَا؟

$$\frac{1}{3} * \frac{1}{4} = \frac{1}{12} \text{ m}$$

$$\left(\frac{7}{6} - \frac{5}{6}\right) \times \frac{2}{3}$$

$$= \frac{1}{6} * \frac{2}{3}$$

$$= \frac{1}{3} * \frac{1}{3} = \frac{1}{9}$$

$$\frac{9}{10} \times \left(\frac{4}{9} + \frac{1}{3}\right)^3$$

$$= \frac{9}{10} * \left(\frac{4}{9} + \frac{3}{9}\right)$$

$$= \frac{9}{10} * \frac{7}{9} = \frac{7}{10}$$

أجد ناتج كل مما يأتي في أبسط صورة:

1) $1\frac{3}{4} \times 5\frac{1}{7}$

2) $\frac{5}{12} \times 2\frac{5}{8}$

3) $7\frac{1}{5} \times \frac{5}{8}$

4) $3\frac{1}{2} \times 1\frac{1}{7}$

1) $\frac{7}{4} * \frac{36}{7} \div 4$
 $= \frac{\cancel{7}}{4} * \frac{9}{\cancel{7}} = 9$

2) $\frac{5}{12} * \frac{21}{8} \div 3$
 $= \frac{5}{4} * \frac{7}{8} = \frac{35}{32}$
 $= 1\frac{3}{32}$

3) $\frac{36}{5} * \frac{5}{8} \div 4$
 $= \frac{9}{1} * \frac{1}{2} = \frac{9}{2}$
 $= 4\frac{1}{2}$

$$5 \quad 10 \times 8 \frac{3}{8}$$

$$6 \quad 2 \frac{5}{11} \times 33$$

$$= \frac{27}{11} \times 33 \quad \div 11$$

$$7 \quad 40 \times \frac{11}{32} \quad \div 8 = \frac{5}{1} * \frac{11}{4}$$

$$8 \quad \frac{1}{81} \times 54 \quad \div 9 = \frac{1}{9} * \frac{6}{1}$$

$$= \frac{27}{1} \times 3 = \boxed{81}$$

$$5) \quad \frac{10}{1} * \frac{67}{8} \quad \div 2$$

$$= \frac{5}{1} * \frac{67}{4}$$

$$= \frac{335}{4}$$

$$= \boxed{83 \frac{3}{4}}$$

$$\begin{array}{r} 83 \\ 4 \overline{) 335} \\ \underline{-32} \\ 15 \\ \underline{-12} \\ 3 \end{array}$$

$$= \frac{55}{4} = \boxed{13 \frac{3}{4}}$$

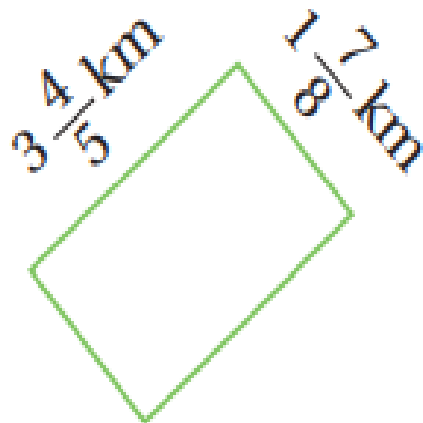
$$\begin{array}{r} 13 \\ 4 \overline{) 55} \\ \underline{-4} \\ 15 \\ \underline{-12} \\ 3 \end{array}$$

$$= \frac{1}{9} * \frac{6}{1}$$

$$= \frac{6 \div 3}{9 \div 3} = \boxed{\frac{2}{3}}$$

$$A = L * W$$

9



$$A = L * W$$

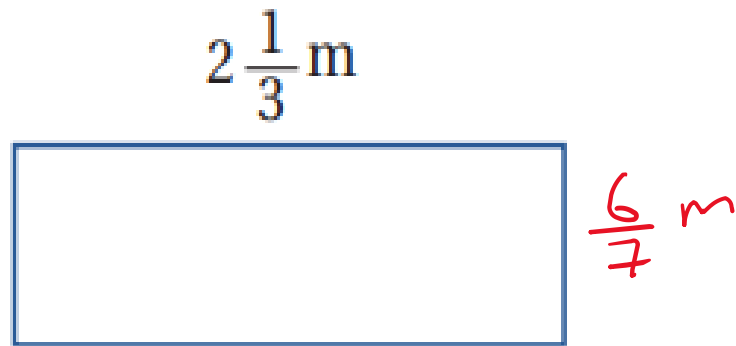
$$= 3\frac{4}{5} * 1\frac{7}{8}$$

$$= \frac{19}{5} * \frac{15}{8}$$

5 ∴

$$= \frac{19}{1} * \frac{3}{8} = \frac{57}{8} = 7\frac{1}{8} \text{ km}^2$$

10



أجد مساحة كل من المستطيلين الآتين:

$$A = L * W$$

$$= 2\frac{1}{3} * \frac{6}{7}$$

$$= \frac{7}{3} * \frac{6}{7} \quad \therefore 3$$

$$= \frac{1}{1} * \frac{2}{1}$$

$$= 2 \text{ m}^2$$

1 $\frac{1}{6} \div \frac{5}{12}$

3 $\frac{15}{17} \div 30$

1) $\frac{1}{6} * \frac{12}{5} \div 6$
 $= \frac{1}{1} * \frac{2}{5} = \frac{2}{5}$

$= \frac{15 \div 15}{17} * \frac{1}{30 \div 15}$
 $= \frac{1}{17} * \frac{1}{2}$
 $= \frac{1}{34}$

2 $\frac{6}{7} \div \frac{9}{20}$
 $= \frac{6 \div 3}{7} * \frac{20}{9 \div 3}$
 $= \frac{20}{14} = 2 \frac{12}{14}$

4 $40 \div \frac{10}{13}$
 $40 * \frac{13}{10} \div 10$
 $= \frac{4 * 13}{1} \frac{1}{1}$
 $= 52$

$$\frac{29}{90} \div \frac{9}{70}$$

$$= \frac{29}{90} * \frac{70}{9} \div 10$$

$$= \frac{19}{9} * \frac{7}{9} = \frac{133}{81}$$

$$42 \div 2 \frac{2}{13}$$

$$= 42 \div \frac{28}{13}$$

$$= 42 * \frac{13}{28}$$

$$= \frac{6 \div 2 * 13}{1} = \frac{3 * 13}{2} = \frac{39}{2} = 19 \frac{1}{2}$$

$$\frac{5}{18} \div \frac{31}{72}$$

$$\frac{5}{18} * \frac{72}{31} \div 9$$

$$\frac{5}{2 \div 2} * \frac{8 \div 2}{31} = \frac{5}{1} * \frac{4}{31} = \frac{20}{31}$$

$$2 \frac{1}{3} \div \left(\frac{1}{3} + \frac{5}{6} \right)$$

$$\frac{7}{3} \div \left(\frac{2}{6} + \frac{5}{6} \right)$$

$$\frac{7}{3} \div \frac{7}{6}$$

$$\frac{7}{3} * \frac{6}{7} = 1 * 2 = 2$$

الأولى
ملا نقول

1) $2\frac{+1}{\times 6} \div \frac{13}{15}$

2) $\frac{9}{100} \div 1\frac{+7}{\times 20} \rightarrow \frac{27}{20}$

3) $3\frac{+1}{\times 7} \div 1\frac{+11}{\times 9} \rightarrow \frac{20}{9}$

4) $10\frac{+2}{\times 3} \div \frac{8}{1}$

1) $\frac{13}{6} \div \frac{13}{15}$
 $= \frac{13}{6} * \frac{15}{13} \div 3$
 $= \frac{1}{2} * \frac{5}{1}$
 $= \frac{5}{2}$
 $= 2\frac{1}{2}$

2) $\frac{9}{100} * \frac{20}{27} \div 20$
 $= \frac{1}{5} * \frac{1}{3}$
 $= \frac{1}{15}$

3) $\frac{22}{7} * \frac{9}{20} \div 2$
 $= \frac{11}{7} * \frac{9}{10}$
 $= \frac{99}{70}$
 $= 1\frac{29}{70}$

4) $\frac{32}{3} * \frac{1}{8} \div 8$
 $= \frac{4}{3}$

$$1 \quad \frac{3 \times 2}{14 \times 2} + \frac{1 \times 7}{4 \times 7} = \frac{6}{28} + \frac{7}{28} = \frac{13}{28}$$

a) $\frac{4}{18}$

b) $\frac{7}{14}$

c) $\frac{4}{28}$

d) $\frac{13}{28}$

$$2 \quad \frac{7 \times 2}{12 \times 2} - \frac{3 \times 3}{8 \times 3} = \frac{14}{24} - \frac{9}{24} = \frac{5}{24}$$

a) $\frac{4}{24}$

b) $\frac{5}{24}$

c) $\frac{2}{24}$

d) $\frac{3}{24}$

$$3 \quad 1 \frac{2}{3} + 4 \frac{1}{5} = 1 \frac{10}{15} + 4 \frac{3}{5} = 5 \frac{13}{15}$$

a) $5 \frac{3}{12}$

b) $5 \frac{13}{15}$

c) $5 \frac{3}{8}$

d) $5 \frac{2}{8}$

اختر رمز الإجابة الصحيحة

$$6 \quad \frac{3}{8} \div \frac{3}{4} = \frac{3}{8} * \frac{4}{3} = \frac{1}{2}$$

a) $\frac{9}{32}$

b) $\frac{2}{1}$

c) $\frac{1}{4}$

d) $\frac{1}{2}$

$$7 \quad 2 \frac{1}{5} \times 1 \frac{3}{4} = \frac{11}{5} * \frac{7}{4} = \frac{77}{20}$$

a) $2 \frac{3}{20}$

b) $\frac{40}{20}$

c) $3 \frac{4}{20}$

d) $\frac{77}{20}$