

حلول تمارين درس الكسور والعمليات عليها -4-

(2) الكسور:

2.5 جمع (أو طرح) كسرين:

حل التمرين 1:

$\frac{1}{2} + \frac{5}{2} = \frac{6}{2} = 3$	$\frac{12}{7} - \frac{9}{7} = \frac{3}{7}$	$\frac{1}{3} + \frac{5}{6} = \frac{2}{6} + \frac{5}{6} = \frac{7}{6}$
$\frac{5}{6} - \frac{1}{3} = \frac{5}{6} - \frac{2}{6} = \frac{3}{6} = \frac{1}{2}$	$\frac{7}{5} - \frac{3}{10} = \frac{14}{10} - \frac{3}{10} = \frac{11}{10}$	$\frac{24}{27} - \frac{2}{3} = \frac{8}{9} - \frac{2}{3} = \frac{8}{9} - \frac{6}{9} = \frac{2}{9}$
$1 + \frac{5}{6} = \frac{6}{6} + \frac{5}{6} = \frac{11}{6}$	$\frac{1}{4} + \frac{1}{2} = \frac{1}{4} + \frac{2}{4} = \frac{3}{4}$	$6 + \frac{2}{5} = \frac{30}{5} + \frac{2}{5} = \frac{32}{5}$

حل التمرين 2:

$\frac{13}{7} + \frac{2}{21} = \frac{39}{21} + \frac{2}{21} = \frac{41}{21}$	$\frac{41}{16} - \frac{9}{4} = \frac{41}{16} - \frac{36}{16} = \frac{5}{16}$	$\frac{4}{5} + \frac{12}{5} = \frac{16}{5}$
$\frac{11}{2} - \frac{1}{2} = \frac{10}{2} = 5$	$13 + \frac{9}{7} = \frac{91}{7} + \frac{9}{7} = \frac{100}{7}$	$\frac{13}{5} + \frac{3}{5} = \frac{16}{5}$
$\frac{8}{11} + \frac{7}{143} = \frac{104}{143} + \frac{7}{143} = \frac{111}{143}$	$\frac{7}{11} + 15 = \frac{7}{11} + \frac{165}{11} = \frac{172}{11}$	
$\frac{11}{9} + \frac{2}{45} = \frac{55}{45} + \frac{2}{45} = \frac{57}{45} = \frac{19 \times 3}{15 \times 3} = \frac{19}{15}$	$\frac{2}{11} + \frac{5}{11} = \frac{7}{11}$	
$12 + \frac{13}{11} = \frac{132}{11} + \frac{13}{11} = \frac{145}{11}$	$\frac{2}{3} + \frac{5}{6} = \frac{4}{6} + \frac{5}{6} = \frac{9}{6} = \frac{3 \times 3}{2 \times 3} = \frac{3}{2}$	

حل التمرين 3:

$\frac{3}{11} - \frac{2}{99} = \frac{27}{99} - \frac{2}{99} = \frac{25}{99}$	$\frac{7}{9} - \frac{5}{9} = \frac{2}{9}$	$\frac{73}{9} - 8 = \frac{73}{9} - \frac{72}{9} = \frac{1}{9}$
$15 - \frac{9}{8} = \frac{120}{8} - \frac{9}{8} = \frac{111}{8}$	$\frac{13}{5} - \frac{2}{35} = \frac{91}{35} - \frac{2}{35} = \frac{89}{35}$	$\frac{20}{9} - \frac{5}{9} = \frac{15}{9}$
$\frac{118}{11} - 10 = \frac{118}{11} - \frac{110}{11} = \frac{8}{11}$	$\frac{5}{2} - \frac{13}{12} = \frac{30}{12} - \frac{13}{12} = \frac{17}{12}$	$\frac{2}{3} - \frac{5}{9} = \frac{6}{9} - \frac{5}{9} = \frac{1}{9}$
$\frac{2}{7} - \frac{13}{63} = \frac{18}{63} - \frac{13}{63} = \frac{5}{63}$	$19 - \frac{2}{5} = \frac{95}{5} - \frac{2}{5} = \frac{93}{5}$	
$\frac{13}{8} - \frac{5}{72} = \frac{117}{72} - \frac{5}{72} = \frac{112}{72} = \frac{14 \times 8}{9 \times 8} = \frac{14}{9}$		

حل التمرين 4:

$13 - \frac{7}{3} = \frac{39}{3} - \frac{7}{3} = \frac{32}{3}$	$\frac{98}{11} - 2 = \frac{98}{11} - \frac{22}{11} = \frac{76}{11}$
$\frac{2}{3} + \left(\frac{5}{3} - \frac{1}{3}\right) = \frac{2}{3} + \frac{4}{3} = \frac{6}{3} = 2$	$\frac{19}{5} - \left(\frac{12}{5} - \frac{1}{5}\right) = \frac{19}{5} - \frac{11}{5} = \frac{8}{5}$
$\frac{7}{2} - \frac{3}{26} = \frac{91}{26} - \frac{3}{26} = \frac{88}{26} = \frac{44 \times \cancel{2}}{13 \times \cancel{2}} = \frac{44}{13}$	$4 - \frac{11}{3} = \frac{12}{3} - \frac{11}{3} = \frac{1}{3}$
$\frac{19}{5} - \left(\frac{12}{5} - \frac{1}{5}\right) + \frac{8}{5} = \frac{19}{5} - \frac{11}{5} + \frac{8}{5} = \frac{19-11+8}{5} = \frac{16}{5}$	
$\frac{2}{5} + \frac{19}{5} - \left(\frac{12}{5} + \frac{1}{5}\right) = \frac{21}{5} - \frac{13}{5} = \frac{8}{5}$	

2.6 ضرب كسرين:

حل التمرين 1:

$\frac{11}{7} \times \frac{4}{3} = \frac{11 \times 4}{7 \times 3} = \frac{44}{21}$	$\frac{7}{8} \times \frac{5}{14} = \frac{7 \times 5}{8 \times 14} = \frac{\cancel{7} \times 5}{8 \times 2 \times \cancel{7}} = \frac{5}{16}$
$\frac{8}{45} \times \frac{2}{15} = \frac{8 \times 2}{45 \times 15} = \frac{16}{675}$	$\frac{13}{7} \times \frac{11}{5} = \frac{13 \times 11}{7 \times 5} = \frac{143}{35}$
$\frac{2}{3} \times \frac{5}{3} = \frac{2 \times 5}{3 \times 3} = \frac{10}{9}$	$\frac{5}{15} \times \frac{6}{14} = \frac{5 \times 6}{15 \times 14} = \frac{\cancel{5} \times \cancel{6} \times \cancel{2} \times 1}{\cancel{5} \times \cancel{6} \times 7 \times \cancel{2}} = \frac{1}{7}$
$\frac{11}{2} \times \frac{12}{5} = \frac{11 \times 12}{2 \times 5} = \frac{11 \times 6 \times \cancel{2}}{\cancel{2} \times 5} = \frac{66}{5}$	$\frac{13}{7} \times \frac{14}{3} = \frac{13 \times 14}{7 \times 3} = \frac{13 \times 2 \times \cancel{7}}{\cancel{7} \times 3} = \frac{26}{3}$

حل التمرين 2:

$\frac{1}{8} \times \frac{2}{20} = \frac{1 \times 2}{8 \times 20} = \frac{1 \times \cancel{2}}{8 \times 10 \times \cancel{2}} = \frac{1}{80}$	$\frac{7}{6} \times \frac{10}{17} = \frac{7 \times 10}{6 \times 17} = \frac{7 \times 5 \times \cancel{2}}{3 \times \cancel{2} \times 17} = \frac{35}{51}$
$\frac{1}{3} \times \frac{3}{4} = \frac{1 \times 3}{3 \times 4} = \frac{1 \times \cancel{3}}{\cancel{3} \times 4} = \frac{1}{4}$	$\frac{7}{9} \times \frac{11}{19} = \frac{7 \times 11}{9 \times 19} = \frac{77}{171}$
$\frac{10}{8} \times \frac{14}{5} = \frac{10 \times 14}{8 \times 5} = \frac{\cancel{5} \times \cancel{2} \times \cancel{2} \times 7}{\cancel{2} \times \cancel{2} \times 2 \times \cancel{5}} = \frac{7}{2}$	$\frac{10}{9} \times \frac{8}{13} = \frac{10 \times 8}{9 \times 13} = \frac{80}{117}$
$\frac{2}{3} \times \frac{7}{18} = \frac{2 \times 7}{3 \times 18} = \frac{\cancel{2} \times 7}{3 \times \cancel{2} \times 9} = \frac{7}{27}$	$\frac{1}{3} \times \frac{4}{6} = \frac{1 \times 4}{3 \times 6} = \frac{1 \times 2 \times \cancel{2}}{3 \times \cancel{2} \times 3} = \frac{2}{9}$

حل التمرين 3:

$\frac{13}{3} \times \frac{6}{5} = \frac{13 \times 6}{3 \times 5} = \frac{13 \times 2 \times \cancel{3}}{\cancel{3} \times 5} = \frac{26}{5}$	$\frac{27}{11} \times \frac{22}{7} = \frac{27 \times 22}{11 \times 7} = \frac{27 \times 2 \times \cancel{11}}{\cancel{11} \times 7} = \frac{54}{7}$
$\frac{11}{13} \times \frac{3}{22} = \frac{11 \times 3}{13 \times 22} = \frac{\cancel{11} \times 3}{13 \times 2 \times \cancel{11}} = \frac{3}{26}$	$\frac{23}{22} \times \frac{11}{20} = \frac{23 \times 11}{22 \times 20} = \frac{23 \times \cancel{11}}{\cancel{11} \times 2 \times 20} = \frac{23}{40}$
$\frac{5}{28} \times \frac{21}{19} = \frac{5 \times 21}{28 \times 19} = \frac{5 \times 3 \times \cancel{7}}{4 \times \cancel{7} \times 19} = \frac{15}{76}$	$\frac{3}{20} \times \frac{7}{15} = \frac{3 \times 7}{20 \times 15} = \frac{\cancel{3} \times 7}{20 \times 5 \times \cancel{3}} = \frac{7}{100}$
$\frac{25}{18} \times \frac{19}{15} = \frac{25 \times 19}{18 \times 15} = \frac{5 \times \cancel{5} \times 19}{18 \times 3 \times \cancel{5}} = \frac{95}{54}$	$\frac{15}{24} \times \frac{7}{25} = \frac{15 \times 7}{24 \times 25} = \frac{\cancel{3} \times \cancel{5} \times 7}{\cancel{3} \times 8 \times 5 \times \cancel{5}} = \frac{7}{40}$
$\frac{8}{15} \times \frac{18}{19} = \frac{8 \times 18}{15 \times 19} = \frac{8 \times \cancel{3} \times 6}{\cancel{3} \times 5 \times 19} = \frac{48}{95}$	$\frac{17}{6} \times \frac{8}{11} = \frac{17 \times 8}{6 \times 11} = \frac{17 \times \cancel{2} \times 4}{\cancel{2} \times 3 \times 11} = \frac{68}{33}$

حل التمرين 4:

$\frac{10}{11} \times \frac{1}{0,14} = \frac{10 \times 1}{11 \times 0,14} = \frac{\cancel{2} \times 5 \times 1}{11 \times \cancel{2} \times 0,07} = \frac{5}{0,77} = \frac{500}{77}$
$\frac{18}{10} \times \frac{9}{0,6} = \frac{18 \times 9}{10 \times 0,6} = \frac{3 \times \cancel{6} \times 9}{1 \times \cancel{6}} = \frac{27}{1}$
$\frac{0,03}{1,5} \times \frac{2}{16} = \frac{0,03 \times 2}{1,5 \times 16} = \frac{0,03 \times \cancel{2}}{1,5 \times 8 \times \cancel{2}} = \frac{0,03}{12} = \frac{3}{1200} = \frac{1 \times \cancel{3}}{400 \times \cancel{3}} = \frac{1}{400}$
$\frac{0,7}{18} \times \frac{9}{0,06} = \frac{0,7 \times 9}{18 \times 0,06} = \frac{0,7 \times \cancel{9}}{2 \times \cancel{9} \times 0,06} = \frac{0,7}{0,12} = \frac{70}{12} = \frac{35}{6}$
$\frac{1,5}{5} \times \frac{1,3}{6} = \frac{1,5 \times 1,3}{5 \times 6} = \frac{1,95}{30} = \frac{195}{3000} = \frac{13 \times \cancel{15}}{200 \times \cancel{15}} = \frac{13}{200}$
$\frac{0,13}{0,6} \times \frac{0,3}{0,11} = \frac{0,13 \times 0,3}{0,6 \times 0,11} = \frac{0,13 \times \cancel{0,3}}{\cancel{0,3} \times 2 \times 0,11} = \frac{0,13}{0,22} = \frac{13}{22}$
$\frac{15}{150} \times \frac{0,3}{1,5} = \frac{15 \times 0,3}{150 \times 1,5} = \frac{\cancel{15} \times \cancel{0,3} \times 1}{\cancel{15} \times 10 \times \cancel{0,3} \times 5} = \frac{1}{50}$
$\frac{0,8}{1,3} \times \frac{1}{2} = \frac{0,8 \times 1}{1,3 \times 2} = \frac{0,4 \times \cancel{2} \times 1}{1,3 \times \cancel{2}} = \frac{0,4}{1,3} = \frac{4}{13}$