درس الجمع والطرح

السنة الثامنة أساسي

PROFiti

أحسب :

$\left(\frac{-19}{20}\right)+\left(\frac{-5}{4}\right)$; $\frac{9}{15}+\left(\frac{-7}{5}\right)$; $\frac{-3}{7}+\frac{8}{14}$; $\frac{3}{4}+\frac{5}{2}$; $\left(\frac{-5}{9}\right)+\frac{5}{3}+\left(\frac{-4}{9}\right)$

$\frac{3}{40}+\left(\frac{-4}{5}\right)+\frac{7}{8}$; $\frac{11}{4}+\frac{9}{2}+\frac{15}{8}$; $\left(\frac{-2}{7}\right)+\left(\frac{-8}{14}\right)+\left(\frac{-9}{21}\right)$

$\frac{-3\times2}{7\times2}+\frac{8}{14}=\frac{-6}{14}+\frac{8}{14}$

$=\frac{2}{14}$

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

$\left(\frac{-5}{9}\right)+\frac{5}{3}+\left(\frac{-4}{9}\right)$

$=\frac{-5}{9}+\frac{5}{3}-\frac{4}{9}$

$=\frac{-5}{9}-\frac{4}{9}+\frac{5}{3}$

$=\frac{-5-4}{9}+5/3$

$=\frac{-9}{9}+\frac{5\times3}{3\times3}$

$=\frac{-9}{9}+\frac{15}{9}$

$=6/9$

$+\left(-\right)=-$

$3-(5)=3-5$

$3-(-5)=3+5$

$-\times-=+$

$-\times+=-$

$5-4=1$

$-5-4=$

$-\frac{2}{7}+\left(\frac{-8}{14}\right)+\left(\frac{-9}{21}\right)$

$=\frac{-2}{7}-\frac{8}{14}-\frac{9}{21}$

$=\frac{-4}{14}-\frac{8}{14}-\frac{9}{21}=\frac{-4-8}{14}-\frac{9}{21}$

$=\frac{-12}{14}\times\frac{9}{21}=-12\times$

PROFiti

$$\frac{3}{40} + \left(\frac{-4}{5}\right) + \frac{7}{8}$$

$$= \frac{3}{40} - \frac{4\times 8}{5\times 8} + \frac{7\times 5}{8\times 5}$$

$$= \frac{3}{40} - \frac{12}{40} + \frac{35}{40}$$

$$= \frac{-9+35}{40} = \frac{35-9}{40}$$

$$= \frac{26}{40}.$$

PROFiti

$$\frac{3}{40} + \left(\frac{-4}{5}\right) + \frac{7}{8}$$

$$= \frac{3}{40} - \frac{4\times 8}{5\times 8} + \frac{7\times 5}{8\times 5}$$

$$= \frac{3}{40} - \frac{12}{40} + \frac{35}{40}$$

$$= \frac{-9+35}{40} = \frac{35-9}{40}$$

$$= \frac{26}{40}.$$

PROFiti

أحسب

$$\left(\frac{-43}{36}\right)-\left(\frac{-23}{12}\right);\ \frac{35}{20}-\left(\frac{-5}{8}\right);\ \left(\frac{-1}{14}\right)-\frac{11}{2};\ \frac{15}{11}-\frac{9}{4};\ \frac{28}{21}-\left(\frac{-5}{2}\right)-\frac{31}{6}$$

$$\left(\frac{-25}{45}\right)-\frac{1}{3}-\frac{7}{9};\ \frac{13}{4}-\frac{17}{2}-\frac{19}{8};\ \left(\frac{-7}{4}\right)-\left(\frac{-2}{5}\right)-\left(\frac{-3}{20}\right)$$

$$\frac{35}{20}-\left(\frac{-5}{8}\right)=\frac{35}{20}+\frac{5}{8}$$

$$=\frac{35\times 8}{160}+\frac{100}{160}$$

$$=\frac{35}{\ }$$

$$-\frac{7}{4}-\left(\frac{-2}{5}\right)-\left(\frac{-3}{20}\right)$$

$$=\frac{-7}{4}+\frac{2}{5}+\frac{30}{20}$$

$$=\frac{-7\times 5}{4\times 5}+\frac{2\times 4}{5\times 4}+\frac{30}{20}$$

$$=\frac{-35}{20}+\frac{8}{20}+\frac{30}{20}$$

$$=\frac{-35+8+30}{20}=\frac{3}{20}$$

PROFiti

تذكير :

$1x + 1x = 2x$

$5x - 2x = 3x$

$2a - 5a = -3a$

$-6b - 3b = -9b$

$\frac{5}{2}a + \frac{3}{1}a$

$= \frac{5 \times 4}{2 \times 4}a + \frac{3}{1}a$

$= \frac{20}{8}a + \frac{3}{8}a$

$= \frac{23}{8}a$

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اختصر العبارات التالية :

$X = 3a + 5b - 2a + 3b + a - b$ ، $Y = \frac{5}{2}a - \frac{4}{5}b + \frac{3}{4}a + 2b$ ، $Z = -\frac{2}{3}b + \frac{3}{2}a - \frac{3}{5}b - \frac{7}{4}a + b + a.$

$T = \frac{1}{2}a - \frac{5}{3}b - \frac{4}{7}a + \frac{5}{9}b - a - b.$

$X = 3a + 5b - 2a + 3b + a - b$

$= 3a - 2a + a + 5b + 3b - b$

$= a + a + 5b + 2b$

$= 2a + 7b.$

$Y = \frac{5}{2}a - \frac{4}{5}b + \frac{3}{4}a + 2b$

$= \frac{5}{2}a + \frac{3}{4}a - \frac{4}{5}b + 2b$

$= \frac{13}{4}a - \frac{4}{5}b + \frac{10}{5}b$

$= \frac{13}{4}a + \frac{6}{5}b.$

$\frac{-4}{5}b + \frac{10}{5}b = \frac{-4+10}{5}b$

PROFiti

$Z=-\frac{2}{3}b+\frac{3}{2}a-\frac{3}{5}b-\frac{7}{4}a+b+a.$ • $Y=\frac{5}{2}a-\frac{4}{5}b+\frac{3}{4}a+2b$ • $X=3a+5b-2a+3b+a-b$

$T=\frac{1}{2}a-\frac{5}{3}b-\frac{4}{7}a+\frac{5}{9}b-a-b.$

$Z = -\frac{2}{3}b + \frac{3}{2}a - \frac{3}{5}b - \frac{7}{4}a + b + a$

$= -\frac{2}{3}b - \frac{3}{5}b + b + \frac{3}{2}a - \frac{7}{4}a + a$

$= -\frac{10}{15}b - \frac{9}{15}b + b + \frac{6}{4}a - \frac{7}{4}a + a$

$= -\frac{19}{15}b + b - \frac{1}{4}a + a$

$= -\frac{19}{15}b + \frac{15}{15}b - \frac{1}{4}a + \frac{4}{4}a$

$= -\frac{4}{11}b + \frac{3}{4}a.$

$T = \frac{1}{2}a - \frac{5}{3}b - \frac{4}{7}a + \frac{5}{9}b - a - b$

$T = \frac{1}{2}a - \frac{4}{7}a - a - \frac{5}{3}b + \frac{5}{9}b - b$

$= \frac{7}{14}a - \frac{8}{14}a - a - \frac{15}{9}b + \frac{5}{9}b - b$

$= -\frac{1}{14}a - \frac{14}{14}a - \frac{10}{9}b - \frac{9}{9}b$

$= -\frac{15}{14}a - \frac{19}{9}b$

PROFiti

$B = -[7+(a+b)] + 2(3-b)$

$B = -[7+a+b] + 3 - b$

$= -7 - a - b + 3 - b$

$= -7 + 3 - a - 2b$

$= \boxed{-4 - a - 2b}$

$-(+) = -$

$-(-) = +$

$+(+) = +$

$+(-) = -$

$A = (a-5) + (b-a) - (a+10)$

$= a - 5 + b - a - a - 10$

$= a - a - a + b - 5 - 10$

$= 0 - a + b - 15$

$= \boxed{-a + b - 15}$

$T = -(7+a) - 2a$

$= -7 - a - 2a$

$= \boxed{-7 - 3a}$

$R = -(5 - 2a) - (3 + 4a)$

$= -5 + 2a - 3 - 4a$

$= -5 - 3 + 2a - 4a$

$= \boxed{-8 - 2a}$

PROFiti

$C = -(a+5)-[-b+(3-a)]+(-1-b+a)$

$= -a-5-[-b+3-a]-1-b+a$

$= -a-5+b-3+a-1-b+a$

$= -5-3-1+a$

$= \boxed{-9+a}$

$H = (3-a)-(4c+5)-[3c-(5a+2)]$

$= 3-a-4c-5-[3c-5a-2]$

$= 3-a-4c-5-3c+5a+2$

$= 3-5+2-a+5a-4c-3c$

$= -2+2+4a-7c$

$= \boxed{4a-7c}$

$D = -(a+5)-[-b+(3-a)]+(-1-b+a)$

$D = -a-5-[-b+3-a]-1-b+a$

$= -a-5+b-3+a-1-b+a$

$= -5-1-3-a$

$= \boxed{-9-a}$

$G = -[(5-c)-(3+a)]-2c+a$

$G = -[5-c-3-a]-2c+a$

$= -5+c+3+a-2c+a$

$= -5+3+c-2c+a+a$

$= \boxed{-2-c+2a}$

PROFiti

ليكن a و b عددين كسريين نسبيين حيث $a-b=-\frac{7}{2}$. احسب :

$$F=\left(a-\frac{11}{8}\right)+\left(\frac{3}{2}-b\right) \; ; \; E=a+\frac{9}{4}-b \; ; \; H=\left(b-\frac{9}{8}\right)-\left(a-\frac{5}{16}\right) \; ; \; G=a-\left(\frac{13}{20}+b\right)-\frac{31}{4}$$

$$G=a-\left(\frac{13}{20}+b\right)-\frac{31}{4}$$
$$=a-\frac{13}{20}-b-\frac{31}{4}$$
$$=a-b-\frac{13}{20}-\frac{31}{4}$$
$$=a-b-\frac{11}{20}-\frac{155}{20}$$
$$=a-b-\frac{768}{20}$$
$$=\frac{-7}{2}-\frac{168}{20}$$
$$=-\frac{70}{20}-\frac{168}{20}$$
$$=-\frac{238}{20}$$

31 | 5 | 155 | 15 | 167

$$b-a=-(a-b)$$
$$=-(a-b)$$
$$=-a+b$$
$$=b-a$$

$$H=\left(b-\frac{9}{8}\right)-\left(a-\frac{5}{16}\right)$$
$$=b-\frac{9}{8}-a+\frac{5}{16}$$
$$=b-a-\frac{9}{8}+\frac{5}{16}$$
$$=b-a-\frac{18}{16}+\frac{5}{16}$$
$$=b-a-\frac{13}{16}$$
$$=-(a-b)-\frac{13}{16}$$
$$=-\left(-\frac{7}{2}\right)-\frac{13}{16}$$
$$=\frac{7}{2}-\frac{13}{16}=\frac{56}{16}-\frac{13}{16}=\frac{43}{16}$$

PROFiti

ليكن a و b عددين كسريين نسبيين حيث $a-b=-\frac{7}{2}$. احسب :

$$F=\left(a-\frac{11}{8}\right)+\left(\frac{3}{2}-b\right) \; ; \; E=a+\frac{9}{4}-b \; ; \; H=\left(b-\frac{9}{8}\right)-\left(a-\frac{5}{16}\right) \; ; \; G=a-\left(\frac{13}{20}+b\right)-\frac{31}{4}$$

$$E = a+\frac{9}{4}-b$$
$$= a-b+\frac{9}{4}$$
$$= -\frac{7}{2}+\frac{9}{4}$$
$$= -\frac{14}{4}+\frac{9}{4}$$
$$= -\frac{5}{4}$$

$$F = \left(a-\frac{11}{8}\right)+\left(\frac{3}{2}-b\right)$$
$$= a-\frac{11}{8}+\frac{3}{2}-b$$
$$= a-b-\frac{11}{8}+\frac{12}{8}$$
$$= -\frac{7}{2}+\frac{1}{8}$$
$$= -\frac{28}{8}+\frac{1}{8}$$
$$= \frac{-27}{8}$$

PROFiti

$$S = \left(b - \frac{3}{4}\right) - \left[a + \frac{2}{4}\right]$$

$$= b - \frac{3}{4} - a - \frac{2}{4}$$

$$= b - a - \frac{5}{4}$$

$$= -(a-b) - \frac{5}{4}$$

$$= -\left(\frac{-7}{2}\right) - \frac{5}{4}$$

$$= \frac{7}{2} - \frac{5}{4} = \frac{14}{2} - \frac{5}{4}$$

$$= \frac{11}{4}$$

$$Z = -\left(b + \frac{3}{5}\right) - \left(-a + \frac{3}{15}\right)$$

$$= -b - \frac{3}{5} + a + \frac{3}{15}$$

$$= -b + a - \frac{9}{15} - \frac{3}{15}$$

$$= a - b - \frac{12}{15} = \frac{-7}{2} - \frac{12}{15}$$

$$X = (b-5) - (2+a)$$

$$= b + 5 - 2 - a$$

$$= b - a + 5 - 2$$

$$= -\frac{7}{2} + 3 = \frac{7}{2} + \frac{6}{2}$$

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

$$P = \left[-a - \left(\frac{3}{2} + a\right)\right] - 2a - (3a - 2)$$

$$= -\left[a - \frac{3}{2} - a\right] - 2a - 3a + 2$$

$$= -a + \frac{3}{2} + a - 2a - 3a + 2 = -5a + \frac{3}{2} + 2$$

$$= -$$