

Question 1

- (1) $25'973,58 - 32'801 + 155$
 $= 25'973,58 - (32'801 - 155)$
 $= 25'973,58 - 32'646$
 $= -6'672,42$
- (2) $-999,888 - [123'456,78 + (-999,888)]$
 $= -\cancel{999,888} - 123'456,78 + \cancel{999,888}$
 $= -123'456,78$
- (3) $-36 : (-1,25) \cdot 17 : (-9) : 0,1$
 $= -36 : 1,25 \cdot 17 : 9 : 0,1$
 $= -\frac{\overset{4}{36} \cdot 17}{1,25 \cdot \underset{1}{0,1}}$
 $= -\frac{68 \cdot 8}{1,25 \cdot 8 \cdot 0,1}$
 $= -\frac{544}{10 \cdot 0,1}$
 $= -544$

Question 2

- (1) $-2x(-3x^2 \cdot 5) = 30x^3$
- (2) $(-12 - 17x) \cdot 6 - 3(14x - 5)$

$$= -72 - 102x - 42x + 15$$

$$= -144x - 57$$

- (3) $a \cdot (-b) \cdot (-2c) - 3 \cdot (-ab)(-5c) + abc$
 $= 2abc - 15abc + abc$
 $= -12abc$

Question 3

- (1) $-52x^2yz - 13xy^2z^4 + 26x^3y^2z^2$
 $= -13xyz(4x + yz^3 - 2x^2yz)$
- (2) $35a^2(-b)^3 - 56(-a)(-b^2)$
 $= -35a^2b^3 - 56ab^2$
 $= -7ab^2(5ab + 8)$

Question 4

- (1) $6'468 = 4 \cdot 1617 = 2^2 \cdot 3 \cdot 539 = 2^2 \cdot 3 \cdot 7 \cdot 77 = 2^2 \cdot 3 \cdot 7^2 \cdot 11$
- (2) a) $28 = 2^2 \cdot 7$, donc $28 \mid 6'468$ et $\frac{6'468}{28} = 3 \cdot 7 \cdot 11 = 231$
- b) $77 = 7 \cdot 11$, donc $77 \mid 6'468$ et $\frac{6'468}{77} = 4 \cdot 3 \cdot 7 = 84$
- c) $63 = 3^2 \cdot 7$, donc $63 \nmid 6'468$

Question 5

- (1) $\text{ppcm}(196, 308) = 4 \cdot \text{ppcm}(49, 77)$
 $= 28 \cdot \text{ppcm}(7, 11) = 28 \cdot 77 = 2'156$
- (2) $\text{pgcd}(23'100, 8'820) = 10 \cdot \text{pgcd}(2'310, 882)$

$$\begin{aligned}
&= 10 \cdot 3 \cdot \text{pgcd}(770, 294) \\
&= 30 \cdot 7 \cdot \text{pgcd}(110, 42) \\
&= 210 \cdot 2 \cdot \text{pgcd}(55, 21) \\
&= 420 \\
\text{Donc : } &\frac{23'100}{8'820} = \frac{55}{21}.
\end{aligned}$$

Question 6

Calculer et mettre le résultat sous forme de fraction irréductible :

$$\begin{aligned}
(1) \quad &\frac{208}{88} + \frac{114}{84} - 2 \\
&= \frac{26}{11} + \frac{19}{14} - 2 \\
&= \frac{364}{154} + \frac{209}{154} - \frac{308}{154} \\
&= \frac{265}{154} \\
(2) \quad &\frac{28}{42} + \frac{30}{25} - \frac{11}{15} + 0,15 \\
&= \frac{2}{3} + \frac{6}{5} - \frac{11}{15} + \frac{15}{100} \\
&= \frac{2}{3} + \frac{6}{5} - \frac{11}{15} + \frac{3}{20} \\
&= \frac{40}{60} + \frac{72}{60} - \frac{44}{60} + \frac{9}{60} \\
&= \frac{77}{60}
\end{aligned}$$

$$\begin{aligned}
(3) \quad &3 - \frac{19}{7} + \frac{187}{2} - \frac{8}{7} + \frac{43}{7} - \frac{151}{2} \\
&= 3 + \left(\frac{43}{7} - \frac{19}{7} - \frac{8}{7} \right) + \left(\frac{187}{2} - \frac{151}{2} \right) \\
&= 3 + \frac{16}{7} + \frac{36}{2} \\
&= 3 + \frac{16}{7} + 18 \\
&= 21 + \frac{16}{7} \\
&= \frac{147}{7} + \frac{16}{7} \\
&= \frac{163}{7}
\end{aligned}$$

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