

习题 L7-7：有理数乘法（二）

参考答案与试题解析

一. 试题（共 8 小题）

1. 计算：

(1) $(-0.4) \times (+25) \times (-5)$;

(2) $(-10) \times (-0.1) \times (-8.25)$;

(3) $(-1) \times (-\frac{5}{4}) \times \frac{8}{15} \times \frac{3}{2} \times (-\frac{2}{3}) \times 0 \times (-1)$;

(4) $(-3) \times \frac{5}{6} \times (-\frac{1}{4}) \times (-\frac{1}{4})$;

(5) $(-8) \times [-(-\frac{1}{4})]$;

(6) $(-2.5) \times (+4) \times (-0.3) \times (+33\frac{1}{3}) \times (-2)$;

(7) $(-\frac{5}{24}) \times (-1\frac{3}{5})$;

(8) $(-\frac{1}{5}) \times 2.5 \times (-\frac{7}{16}) \times (-8)$;

(9) $(-3) \times \frac{5}{6} \times (-\frac{9}{5}) \times (-\frac{1}{4})$;

(10) $(-4) \times 7 \times (-1) \times (-0.25)$.

【答案】(1) 50; (2) - 8.25; (3) 0; (4) $-\frac{5}{32}$; (5) - 2; (6) - 200; (7) $\frac{1}{3}$; (8) $-\frac{7}{4}$;

(9) $-\frac{9}{8}$; (10) - 7.

【分析】先确定积的符号，再把绝对值相乘．几个数相乘，有一个因数为 0，积就为 0.

(1) $(-0.4) \times (+25) \times (-5) = + (0.4 \times 25 \times 5) = 50$;

(2) $(-10) \times (-0.1) \times (-8.25) = - (10 \times 0.1 \times 8.25) = - 8.25$;

(3) $(-1) \times (-\frac{5}{4}) \times \frac{8}{15} \times \frac{3}{2} \times (-\frac{2}{3}) \times 0 \times (-1) = 0$;

(4) $((-3) \times \frac{5}{6} \times (-\frac{1}{4}) \times (-\frac{1}{4}) = - (3 \times \frac{5}{6} \times \frac{1}{4} \times \frac{1}{4}) = -\frac{5}{32}$

(5) $(-8) \times [-(-\frac{1}{4})] = (-8) \times \frac{1}{4} = - 2$;

(6) $(-2.5) \times (+4) \times (-0.3) \times (+33\frac{1}{3}) \times (-2)$

$= - (2.5 \times 4) \times (0.3 \times \frac{100}{3}) \times 2 = - 10 \times 10 \times 2 = - 200$;

$$(7) \left(-\frac{5}{24}\right) \times \left(-1\frac{3}{5}\right) = \frac{5}{24} \times \frac{8}{5} = \frac{1}{3}$$

$$(8) \left(-\frac{1}{5}\right) \times 2.5 \times \left(-\frac{7}{16}\right) \times (-8) = -\left(\frac{1}{5} \times 2.5\right) \times \left(\frac{7}{16} \times 8\right) = -\frac{1}{2} \times \frac{7}{2} = -\frac{7}{4};$$

$$(9) (-3) \times \frac{5}{6} \times \left(-\frac{9}{5}\right) \times \left(-\frac{1}{4}\right) = -\left(3 \times \frac{5}{6} \times \frac{9}{5} \times \frac{1}{4}\right) = -\frac{9}{8}$$

$$(10) (-4) \times 7 \times (-1) \times (-0.25) = -(4 \times 0.25 \times 7 \times 1) = -7.$$

2. 计算：

$$(1) 3\frac{1}{3} \times (-0.3) \times \left(-1\frac{1}{4}\right) \times \left(-2\frac{1}{3}\right);$$

$$(2) (-5) \times (-6) \times 3 \times (-2);$$

$$(3) (-3) \times (-1) \times 2 \times 0 \times (-2);$$

$$(4) (-5.6) \times (-4.2) \times 2\frac{1}{7} \times \left(-\frac{5}{14}\right);$$

$$(5) \left(-\frac{11}{12}\right) \times (-3) \times (-4) \times \left(-1\frac{1}{11}\right) \times (-25) \times 5.$$

【答案】 (1) $-\frac{35}{12}$; (2) -180 ; (3) 0 ; (4) -18 ; (5) -1500 .

【分析】 (1) $3\frac{1}{3} \times (-0.3) \times \left(-1\frac{1}{4}\right) \times \left(-2\frac{1}{3}\right) = -\frac{10}{3} \times \frac{3}{10} \times \frac{5}{4} \times \frac{7}{3} = -\frac{35}{12};$

$$(2) (-5) \times (-6) \times 3 \times (-2) = -5 \times 6 \times 3 \times 2 = -180;$$

$$(3) (-3) \times (-1) \times 2 \times 0 \times (-2) = 0;$$

$$(4) (-5.6) \times (-4.2) \times 2\frac{1}{7} \times \left(-\frac{5}{14}\right) = -\left(5.6 \times 4.2 \times \frac{15}{7} \times \frac{5}{14}\right) = -18$$

$$(5) \left(-\frac{11}{12}\right) \times (-3) \times (-4) \times \left(-1\frac{1}{11}\right) \times (-25) \times 5$$

$$= -\frac{11}{12} \times \frac{12}{11} \times (4 \times 25) \times 3 \times 5 = -1 \times 100 \times 15 = -1500.$$

3. 用简便方法计算：

$$(1) \left(-\frac{1}{12} - \frac{1}{36} + \frac{1}{6}\right) \times (-36);$$

$$(2) \left(-99\frac{11}{12}\right) \times 24.$$

【答案】 (1) -2 ; (2) -2398 .

【分析】 (1) 原式 $= \left(-\frac{1}{12}\right) \times (-36) - \frac{1}{36} \times (-36) + \frac{1}{6} \times (-36) = 3 + 1 - 6 = -2.$

$$(2) 原式 = \left(-100 + \frac{1}{12}\right) \times 24 = -100 \times 24 + \frac{1}{12} \times 24 = -2400 + 2 = -2398.$$

4. 已知 $a = (-1) \times (-2) \times (-3)$, $b = (-12) \times (-23) \times (-34) \times (-45)$, 下

列叙述正确的是 ()

- A. a, b 皆为正数
B. a, b 皆为负数
C. a 为正数, b 为负数
D. a 为负数, b 为正数

【答案】D

【分析】 $\because a = (-1) \times (-2) \times (-3)$ 为 3 个负数相乘, $\therefore a$ 为负数,

$\because b = (-12) \times (-23) \times (-34) \times (-45)$ 为 4 个负数相乘, $\therefore b$ 为正数,

$\therefore a$ 为负数, b 为正数,

5. 用 “>” “<” “=” 填空:

(1) 若 $a < 0$, 则 $2a$ < a ;

(2) 若 $a < c < 0 < b$, 则 abc > 0.

【答案】(1) <;

(2) >.

【分析】(1) $\because |2a| > |a|$, 且 $2a < 0, a < 0$, $\therefore 2a < a$;

(2) $\because a < c < 0 < b$, $\therefore abc > 0$.

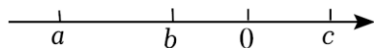
6. 若 $abc > 0$, 则 a, b, c ()

- A. 都大于 0
B. 都小于 0
C. 有一个大于 0, 另外两个小于 0 或三个大于 0
D. 至少有一个小于 0

【答案】C

【分析】 $\because abc > 0$, $\therefore a, b, c$ 有一个大于 0, 另外两个小于 0 或三个大于 0.

7. 若有理数 a, b, c 在数轴上的位置如图所示, 下列说法正确的是 ()



- A. $b(a - c) > 0$ B. $ab < 0$ C. $a + b > 0$ D. $a - b > 0$

【答案】A

【分析】A: $\because a - c < 0, b < 0$, $\therefore b(a - c) > 0$, $\therefore$ 符合题意;

B: $\because a < 0, b < 0$, $\therefore ab > 0$, $\therefore$ 不符合题意;

C: $\because a < 0, b < 0$, $\therefore a + b < 0$, $\therefore$ 不符合题意;

D: $\because a < 0, b < 0, |a| > |b|$, $\therefore a - b < 0$, $\therefore$ 不符合题意;

8. 如果 $abcde < 0$, $a+b=0$, $cd < 0$, 那么这五个数中负因数的个数有 ()

- A. 1 个 B. 2 个 C. 3 个 D. 5 个

【答案】C

【分析】 $\because abcde < 0$, $a+b=0$, $\therefore a$ 、 b 异号, 即一正一负, $\because cd < 0$, $\therefore c$ 、 d 异号, 即一正一负, $\because abcde < 0$, $\therefore$ 负因数的个数为奇数, $\because a$ 、 b 、 c 、 d 中有 2 项为正, $\therefore e < 0$.