

正の数と負の数 (乗法と除法, 四則演算) 解答と解説

1 解答 (1) +10 (2) +24 (3) +4 (4) +28

(1) $(+2) \times (+5) = +(2 \times 5)$

$= +10$

(2) $(+8) \times (+3) = +(8 \times 3)$

$= +24$

(3) $(-2) \times (-2) = +(2 \times 2)$

$= +4$

(4) $(-4) \times (-7) = +(4 \times 7)$

$= +28$

2 解答 (1) -12 (2) -7 (3) -45 (4) -42

(1) $(+4) \times (-3) = -(4 \times 3)$

$= -12$

(2) $(+1) \times (-7) = -(1 \times 7)$

$= -7$

(3) $(-5) \times (+9) = -(5 \times 9)$

$= -45$

(4) $(-7) \times (+6) = -(7 \times 6)$

$= -42$

3 解答 (1) -30 (2) +65 (3) 0 (4) -64 (5) +119 (6) -75

(7) +120 (8) -180

(1) $(-10) \times (+3) = -(10 \times 3)$

$= -30$

(2) $(-5) \times (-13) = +(5 \times 13)$

$= +65$

(3) $0 \times (-18) = 0$

(4) $(+16) \times (-4) = -(16 \times 4)$

$= -64$

(5) $(+7) \times (+17) = +(7 \times 17)$

$= +119$

(6) $(-25) \times (+3) = -(25 \times 3)$

$= -75$

(7) $(-5) \times (-24) = +(5 \times 24)$

$= +120$

(8) $(+12) \times (-15) = -(12 \times 15)$

$= -180$

4 解答 (1) 24 (2) -120 (3) -60

(1) $4 \times (-2) \times (-3) = +(4 \times 2 \times 3)$

$= 24$

(2) $3 \times (-5) \times 8 = -(3 \times 5 \times 8)$

$= -120$

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

$= -60$

5 解答 (1) -9 (2) +0.98 (3) $-\frac{1}{10}$ (4) $+\frac{1}{6}$ (5) $-\frac{2}{9}$

(1) $(+1.5) \times (-6) = -(1.5 \times 6)$

$= -9$

(2) $(-0.7) \times (-1.4) = +(0.7 \times 1.4)$

$= +0.98$

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

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

(4) $(-\frac{3}{4}) \times (-\frac{2}{9}) = +(\frac{3}{4} \times \frac{2}{9})$

$= +\frac{1}{6}$

(5) $(+\frac{8}{15}) \times (-\frac{5}{12}) = -(\frac{8}{15} \times \frac{5}{12})$

$= -\frac{2}{9}$

6 解答 (1) 25 (2) 27 (3) 4 (4) 16 (5) -4 (6) -16

(1) $5^2 = 5 \times 5$

$= 25$

(2) $3^3 = 3 \times 3 \times 3$

$= 27$

(3) $(-2)^2 = (-2) \times (-2)$

$= 4$

(4) $(-4)^2 = (-4) \times (-4)$

$= 16$

(5) $-2^2 = -(2 \times 2)$

$= -4$

(6) $-4^2 = -(4 \times 4)$

$= -16$

7 解答 (1) 1 (2) $-\frac{8}{27}$ (3) 50 (4) 108 (5) -64

(1) $(-1)^4 = (-1) \times (-1) \times (-1) \times (-1) \times (-1)$
 $= 1$

(2) $(-\frac{2}{3})^3 = (-\frac{2}{3}) \times (-\frac{2}{3}) \times (-\frac{2}{3})$
 $= -\frac{8}{27}$

(3) $(-5)^2 \times 2 = 25 \times 2$

$= 50$

(4) $-2^2 \times (-3)^3 = -4 \times (-27)$

$= 108$

(5) $(-4)^2 \times (-2^2) = 16 \times (-4)$

$= -64$

8 解答 (1) +4 (2) +8 (3) +2 (4) +5

(1) $(+12) \div (+3) = +(12 \div 3)$

$= +4$

(2) $(+16) \div (+2) = +(16 \div 2)$

$= +8$

(3) $(-14) \div (-7) = +(14 \div 7)$

$= +2$

(4) $(-25) \div (-5) = +(25 \div 5)$

$= +5$

9 解答 (1) -9 (2) -6 (3) -9 (4) -10

(1) $(+18) \div (-2) = -(18 \div 2)$

$= -9$

(2) $(+24) \div (-4) = -(24 \div 4)$

$= -6$

(3) $(-54) \div (+6) = -(54 \div 6)$

$= -9$

(4) $(-10) \div (+1) = -(10 \div 1)$

$= -10$

10 解答 (1) $-\frac{2}{5}$ (2) $+\frac{6}{7}$ (3) $+\frac{1}{3}$ (4) $-\frac{1}{4}$

(1) $2 \div (-5) = -(2 \div 5)$

$= -\frac{2}{5}$

(2) $(-6) \div (-7) = +(6 \div 7)$

$= +\frac{6}{7}$

(3) $(-3) \div (-9) = +(3 \div 9)$

$= +\frac{3}{9}$

$= +\frac{1}{3}$

(4) $(-5) \div 20 = -(5 \div 20)$

$= -\frac{5}{20}$

$= -\frac{1}{4}$

11 解答 (1) +0.6 (2) -0.9 (3) +10 (4) -12 (5) -3

(1) $(-4.2) \div (-7) = + (4.2 \div 7)$

$= +0.6$

(2) $3.6 \div (-4) = -(3.6 \div 4)$

$= -0.9$

(3) $(-6) \div (-0.6) = +(6 \div 0.6)$

$= +10$

(4) $(-8.4) \div (+0.7) = -(8.4 \div 0.7)$

$= -12$

(5) $7.2 \div (-2.4) = -(7.2 \div 2.4)$

$= -3$

12 解答 (1) $\frac{5}{2}$ (2) $\frac{3}{8}$ (3) $-\frac{7}{4}$ (4) $-\frac{5}{9}$

(1) $\frac{2}{5}$ の逆数は $\frac{5}{2}$

(2) $\frac{8}{3}$ の逆数は $\frac{3}{8}$

(3) $-\frac{4}{7}$ の逆数は $-\frac{7}{4}$

(4) $-\frac{9}{5}$ の逆数は $-\frac{5}{9}$

13 解答 (1) -6 (2) $\frac{5}{3}$ (3) 6 (4) -4

(1) $8 \div \frac{4}{3} \times (-1) = 8 \times \frac{3}{4} \times (-1)$

$= -(8 \times \frac{3}{4} \times 1)$

$= -6$

(2) $-\frac{1}{2} \times 5 \div (-\frac{3}{2}) = -\frac{1}{2} \times 5 \times (-\frac{2}{3})$

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

$= \frac{5}{3}$

(3) $-9 \div (-\frac{3}{4}) \times \frac{1}{2} = -9 \times (-\frac{4}{3}) \times \frac{1}{2}$

$= +(9 \times \frac{4}{3} \times \frac{1}{2})$

$= 6$

(4) $\frac{2}{3} \times 5 \div (-\frac{5}{6}) = \frac{2}{3} \times 5 \times (-\frac{6}{5})$

$= -(\frac{2}{3} \times 5 \times \frac{6}{5})$

$= -4$

14 解答 (1) -3 (2) $-\frac{1}{9}$ (3) $-\frac{3}{10}$ (4) $\frac{9}{10}$

(1) $\frac{2}{3} \times (-\frac{9}{10}) \div \frac{1}{5} = \frac{2}{3} \times (-\frac{9}{10}) \times 5$

$= -(\frac{2}{3} \times \frac{9}{10} \times 5)$

$= -3$

(2) $-\frac{8}{9} \div (-12) \times (-\frac{3}{2}) = -\frac{8}{9} \times (-\frac{1}{12}) \times (-\frac{3}{2})$

$= -(\frac{8}{9} \times \frac{1}{12} \times \frac{3}{2})$

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

(3) $\frac{2}{5} \div (-\frac{6}{7}) \div \frac{14}{9} = \frac{2}{5} \times (-\frac{7}{6}) \times \frac{9}{14}$

$= -(\frac{2}{5} \times \frac{7}{6} \times \frac{9}{14})$

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

(4) $-\frac{3}{4} \div \frac{15}{16} \div (-\frac{8}{9}) = -\frac{3}{4} \times \frac{16}{15} \times (-\frac{9}{8})$

$= +(\frac{3}{4} \times \frac{16}{15} \times \frac{9}{8})$

$= \frac{9}{10}$

15 解答 (1) -9 (2) 11 (3) 0 (4) 25 (5) -5

(1) $-1 + (-4) \times 2 = -1 + (-8)$

$= -1 - 8$

$= -9$

(2) $9 - (-6) \div 3 = 9 - (-2)$

$= 9 + 2$

$= 11$

(3) $12 \div (-2)^2 - 3 = 12 \div 4 - 3$

$= 3 - 3$

$= 0$

(4) $-5 \times (-3^2 + 4) = -5 \times (-9 + 4)$

$= -5 \times (-5)$

$= 25$

(5) $(7^2 - 4) \div (-9) = (49 - 4) \div (-9)$

$= 45 \div (-9)$

$= -5$

16 解答 (1) 22 (2) -1 (3) -12 (4) 4

(1) $(-5)^2 - 15 \div 5 = 25 - 15 \div 5$

$= 25 - 3$

$= 22$

(2) $35 \div (-7) - 2 \times (-2) = -5 - (-4)$

$= -5 + 4$

$= -1$

(3) $-6 \times 4 - 48 \div (-2^2) = -6 \times 4 - 48 \div (-4)$

$= -24 - (-12)$

$= -24 + 12$

$= -12$

(4) $\{-4^2 + (-2)^2\} \div (-3) = (-16 + 4) \div (-3)$

$= (-12) \div (-3)$

$= 4$

17 解答 (1) 16 (2) -3

(1) $3^2 - 14 \div (-2) = 9 - 14 \div (-2)$

$= 9 - (-7)$

$= 9 + 7$

$= 16$

(2) $(5^2 - 7) \div (-6) = (25 - 7) \div (-6)$

$= 18 \div (-6)$

$= -3$

18 解答 (1) -15 (2) 19 (3) 17 (4) -21 (5) 63 (6) 0

(1) $6 + (-3) \times 7 = 6 + (-21) = -15$

(2) $-8 - (-3) \times 9 = -8 - (-27) = -8 + 27 = 19$

(3) $5 \times (-3) + (-4) \times (-8) = -15 + 32 = 17$

(4) $15 \div (-5) - (-6) \times (-3) = -3 - 18 = -21$

(5) $(-9) \times (-6) + (-72) \div (-8) = 54 + 9 = 63$

(6) $36 \div (-3) - 96 \div (-8) = -12 - (-12) = -12 + 12 = 0$

- 19 **解答** (1) -6 (2) -19 (3) 3 (4) 1 (5) -16 (6) -4
 (7) 1 (8) -2 (9) $\frac{1}{3}$ (10) $\frac{7}{3}$ (11) $-\frac{1}{2}$ (12) -48

- (1) $-6^2 \div 4 - (-3) = -36 \div 4 + 3 = -9 + 3 = -6$
 (2) $9^2 + 4 \times (-5^2) = 81 + 4 \times (-25) = 81 + (-100) = 81 - 100 = -19$
 (3) $-3^2 - (-2)^2 \times (-3) = -9 - 4 \times (-3) = -9 - (-12) = -9 + 12 = 3$
 (4) $81 \div (-3)^2 + (-2)^3 = 81 \div 9 + (-8) = 9 - 8 = 1$
 (5) $2 \times (-3^2) + 18 \div (-3)^2 = 2 \times (-9) + 18 \div 9 = -18 + 2 = -16$
 (6) $-(-2^2) - 2^2 - (-2)^2 = -(-4) - 4 - 4 = -4 - 4 - 4 = -12$
 (7) $\frac{5}{2} - \frac{3}{8} \times (-2)^2 = \frac{5}{2} - \frac{3}{8} \times 4 = \frac{5}{2} - \frac{3}{2} = 1$
 (8) $(-2)^3 - (-9) \div \frac{3}{2} = -8 - (-9) \times \frac{2}{3} = -8 - (-6) = -8 + 6 = -2$
 (9) $\left(\frac{1}{2}\right)^2 - \left(-\frac{1}{3}\right) + \left(-\frac{1}{4}\right) = \frac{1}{4} + \frac{1}{3} - \frac{1}{4} = \frac{1}{3}$
 (10) $5 - (-3^2) \div \left(-\frac{3}{2}\right)^3 = 5 - (-9) \div \left(-\frac{27}{8}\right) = 5 - (-9) \times \left(-\frac{8}{27}\right)$
 $= 5 - \frac{8}{3} = \frac{15}{3} - \frac{8}{3} = \frac{7}{3}$
 (11) $-3^2 \times \frac{1}{6} - (-2)^3 \div 8 = -9 \times \frac{1}{6} - (-8) \times \frac{1}{8} = -\frac{3}{2} - (-1) = -\frac{3}{2} + 1$
 $= -\frac{3}{2} + \frac{2}{2} = -\frac{1}{2}$
 (12) $(-4)^3 \div \frac{4}{9} - 6 \times (-4^2) = (-64) \times \frac{9}{4} - 6 \times (-16) = -144 - (-96)$
 $= -144 + 96 = -48$