

## DIRECTED NUMBERS

Form 1 Regular Course  
Vol 1A

### Part 1 - Concept of Directed Number

- (a)  $-\frac{7}{2} < -\frac{11}{5} < +5.2 < \frac{26}{3}$   
(b)  $-5 < -3 < 0 < 2$
- (a)  $-\frac{1}{2} < -\frac{1}{3} < -\frac{1}{4} < -\frac{1}{5}$   
(b)  $-3.14 < -3 < -\frac{6}{7} < -0.4 < 0 < +0.6 < 11$
- D

### Part 2 - Direct Calculation

- $(-2) - 10 - (+5)$   
 $= -2 - 10 - 5$   
 $= -17$
- $-7 - [4 - (-3)]$   
 $= -7 - (4 + 3)$   
 $= -7 - 7$   
 $= -14$
- $6 - [7 + (-15)]$   
 $= 6 - (7 - 15)$   
 $= 6 - (-8)$   
 $= 6 + 8$   
 $= 14$
- $3 - 7 + (-11) - (-15)$   
 $= -4 - 11 + 15$   
 $= -15 + 15$   
 $= 0$

$$\begin{aligned}
 5. \quad & \left(+\frac{1}{6}\right) - \left(+\frac{4}{5}\right) + \left(-\frac{5}{6}\right) \\
 & = \frac{5}{30} - \frac{24}{30} - \frac{25}{30} \\
 & = -\frac{22}{15}
 \end{aligned}$$

$$\begin{aligned}
 6. \quad & (-12) \div (+3) \times (+8) \div (-2) \\
 & = -4 \times 8 \div (-2) \\
 & = -32 \div (-2) \\
 & = 16
 \end{aligned}$$

$$\begin{aligned}
 7. \quad & (-16) \div \left(-\frac{2}{3}\right) \times \frac{1}{4} \div \left(-\frac{9}{2}\right) \\
 & = -\left(16 \times \frac{3}{2} \times \frac{1}{4} \times \frac{2}{9}\right) \\
 & = -\frac{4}{3}
 \end{aligned}$$

$$\begin{aligned}
 8. \quad & \frac{(-5)(+2)(-4)}{(-6)(+3)} \\
 & = -\frac{(5)(2)(4)}{(6)(3)} \\
 & = -\frac{20}{9}
 \end{aligned}$$

$$\begin{aligned}
 9. \quad & (+2) \times [(-6) - 4] \\
 & = 2 \times (-6 - 4) \\
 & = 2 \times (-10) \\
 & = -20
 \end{aligned}$$

$$\begin{aligned}
 10. \quad & [+2 - (+5)] \div [(-3) + (-8)] \\
 & = (2 - 5) \div (-3 - 8) \\
 & = (-3) \div (-11) \\
 & = \frac{3}{11}
 \end{aligned}$$

$$\begin{aligned}
 11. & \left[ \left( +1\frac{1}{4} \right) - \left( -\frac{1}{2} \right) \right] \div \left[ (+3) - \left( -6\frac{1}{3} \right) \right] \\
 & = \left( \frac{5}{4} + \frac{2}{4} \right) \div \left( 3 + 6\frac{1}{3} \right) \\
 & = \frac{7}{4} \div 9\frac{1}{3} \\
 & = \frac{7}{4} \times \frac{3}{28} \\
 & = \frac{3}{16}
 \end{aligned}$$

### Part 3 - Index Problem

$$\begin{aligned}
 1. & (-1)^{10} + (-6) - (-3)^2 \\
 & = 1 - 6 - 9 \\
 & = -5 - 9 \\
 & = -14
 \end{aligned}$$

$$\begin{aligned}
 2. & (-5^2) - (+8) + (-9)^2 - (-1^6) \\
 & = -25 - 8 + 81 - (-1) \\
 & = -33 + 81 + 1 \\
 & = 49
 \end{aligned}$$

$$\begin{aligned}
 3. & (-4^2) - (-4)^2 \\
 & = -16 - 16 \\
 & = -32
 \end{aligned}$$

$$\begin{aligned}
 4. & \left( -\frac{1}{2} \right)^3 + \left( -\frac{1}{2} \right)^2 \\
 & = -\frac{1}{8} + \frac{1}{4} \\
 & = \frac{1}{8}
 \end{aligned}$$

$$\begin{aligned}
 5. & (-5^2) - 5^2 + 2^3 - (-2)^2 \\
 & = -25 - 25 + 8 - 4 \\
 & = -46
 \end{aligned}$$



$$6. (2^3 - 5^2) \times (-1)^{2018} + 3^4$$

$$= (8 - 25) \times 1 + 81$$

$$= -17 + 81$$

$$= 64$$

$$7. 6 - (-2)^3 \times (-3)^2 \div (6)^2$$

$$= 6 - (-8) \times 9 \div 36$$

$$= 6 - (-2)$$

$$= 6 + 2$$

$$= 8$$

$$8. [(-6)^2 - (-3^2)] \div [(-2^2) - (-4)^2]$$

$$= [36 - (-9)] \div [-4 - 16]$$

$$= 45 \div (-20)$$

$$= -\frac{9}{4}$$