

初一数学期中测试参考答案



一、选择题

1. B 2. D 3. D 4. B 5. C 6. A 7. C 8. D 9. C 10. B

二、填空题

11. 0.031 ; 12. 7 ; 13. < ; 14. -1 ;

15. $-a+2b-c$; 16. -2 ; 17. $\frac{1}{4}$; 18. 54

三、解答题

19. (1) $= -3 + (-14)$

$= -17$

(2) $= -4 + 12$

$= 8$

(3) $= -12 + 14 - 8$

$= -6$

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

$= -\frac{3}{2}$

20. (1) 解: 原式 $= (3x^2 - x^2 - 2x^2) + (-6x + 4x) + (-3 - 1)$

$= -2x - 4$

(2) 解: 原式 $= 5a^2 + 2a - 1 - 12 + 32a - 8a^2$

$= -3a^2 + 34a - 13$

21. (1) 解: $6x - 3 = 4x + 3$

$2x = 6$

$x = 3$

(2) 解: $(2x - 5) - 3(3x + 1) = 6$

$2x - 5 - 9x - 3 = 6$

$-7x = 14$

$x = -2$

22. 解: 原式 $= \frac{1}{2}x - 2x + \frac{2}{3}y^2 - \frac{3}{2}x + \frac{1}{3}y^2$

$= -3x + y^2$

当 $x = -2, y = \frac{2}{3}$ 时, 原式 $= (-3) \times (-2) + \left(\frac{2}{3}\right)^2$



$$=6+\frac{4}{9}=6\frac{4}{9}$$

23. (1) 40.5;

$$(2) 40+\frac{1\times(-0.4)+2\times(-0.2)+1\times(-0.1)+11\times 0+3\times 0.3+2\times 0.5}{20}=40.05;$$

(3) 70%; 60%.

24. 解: (1) $\because (a, b)$ 是“相伴数对”,

$$\therefore \frac{1}{2}+\frac{b}{3}=\frac{1+b}{2+3},$$

$$\text{解得 } b=-\frac{9}{4};$$

(2) $\because (m, n)$ 是“相伴数对”,

$$\therefore \frac{3m+2n}{6}=\frac{m+n}{5},$$

$$\therefore 9m+4n=0,$$

$$\text{则原式} = m - \frac{4}{3}n - 4m + 6n - 2 = -\frac{4}{3}n - 3m - 2 = -\frac{9m+4n}{3} - 2 = -2.$$

25. (1) 2; 0; 10; -8;

(2) ① $\because P$ 是 $[B, A]$ 的暗点,

$$\therefore PB=2PA.$$

$$\text{即 } 2t=2(2t-60), \text{ 解得 } t=60.$$

② 当 P 是 $[A, B]$ 的亮点时, $60-2t=2\times 2t$, 解得 $t=10$;

当 P 是 $[B, A]$ 的亮点时, $2t=2(60-2t)$, 解得 $t=20$;

当 A 是 $[B, P]$ 的亮点时, $60=2\times(2t-60)$, 解得 $t=45$;

当 A 是 $[P, B]$ 的亮点时, $2t-60=2\times 60$, 解得 $t=90$;

综上, 当 t 为 10, 20, 45, 90 时, 点 P, A 和 B 中恰有一个点为其余两点的亮点.

附加题

1. (1) 36;

$$(2) ① 6; \frac{n(n+1)}{2}; n^2;$$

$$\textcircled{2} \because N(n,3) = \frac{n(n+1)}{2} = \frac{n^2+n}{2} = \frac{(3-2)n^2+(4-3)n}{2},$$

$$N(n,4) = n^2 = \frac{2n^2+0 \times n}{2} = \frac{(4-2)n^2+(4-4)n}{2},$$

$$N(n,5) = \frac{3n^2}{2} - \frac{1}{2}n = \frac{3n^2-n}{2} = \frac{(5-2)n^2+(4-5)n}{2},$$

$$N(n,6) = 2n^2 - n = \frac{4n^2-2n}{2} = \frac{(6-2)n^2+(4-6)n}{2},$$

$$\text{由此推断出 } N(n,k) = \frac{(k-2)n^2+(4-k)n}{2} \quad (k \geq 3);$$

$$\therefore N(10,24) = \frac{(24-2) \times 10^2 + (4-24) \times 10}{2} = 1000.$$



2. (1) 由题意得: $M\{x-1, -5, 2x+3\} = \frac{x-1-5+2x+3}{3} = x-1$

$$\therefore x-1 = \frac{1}{2}(1+3x)$$

$$\therefore x = -3.$$

(2) 由题意得: $M\{2x, -x+2, 3\} = \frac{2x+(-x+2)+3}{3} = \frac{x+5}{3}$. 若 $4x+1 \geq -1$, 则

$$2 \times \frac{x+5}{3} = -1, \text{ 解得: } x = -\frac{13}{2}. \text{ 此时 } 4x+1 = -25 < -1, \text{ 与条件矛盾; 若 } 4x+1 < -1,$$

$$\text{则 } 2 \times \frac{x+5}{3} = 4x+1, \text{ 解得: } x = \frac{7}{10}. \text{ 此时 } 4x+1 = \frac{19}{5} > -1, \text{ 与条件矛盾; } \therefore \text{不存在.}$$

3. $c+d-b-a$.

4. (1) 9; (2) 3,4,5,7; 3,4,6,7; 3,5,6,7; (3) 50; 0.