

一. 选择题

1. B2. D3. C4.B 5. D 6. C 7. B 8. A9. B10.

C11. C12. B

二. 填空题

13. 6.1×10^{-5} 14. -1 或 7

15. $\frac{4}{27}$ 16. $(x-2)(x-8)$ 17. 138°

18. 3, -10 19. 10^{12}

20. $a=4, b=5, c=-2$

三. 简答题

$$21 \text{ (1) 原式} = \frac{1}{8} + 1 - \frac{1}{8} - 9 \quad (2)$$

$$= -8.$$

$$\text{原式} = [2x + (y-3)][2x - (y-3)]$$

$$= 4x^2 - (y-3)^2$$

$$= 4x^2 - (y^2 - 6y + 9) \quad (3)$$

$$= 4x^2 - y^2 + 6y - 9.$$

$$\begin{cases} x=5, \\ y=1. \end{cases}$$

$$\text{原式} = -\left(\frac{1}{4}\right)^{50} \times (2^2)^{50}$$

$$(4) = -\left(\frac{1}{4} \times 4\right)^{50} \quad (5)$$

$$= -1.$$

$$\text{原式} = 200^2 - 2 \times 200 \times 199 + 199^2$$

$$= (200 - 199)^2$$

$$= 1.$$

$$(6) \text{ 原式} = (1000 - 1) \times (1000 + 1)$$

$$= 1000^2 - 1^2$$

$$= 999999.$$

$$22. (1) \because a+b=3, ab=1,$$

$$\begin{aligned} & (a-1)(b-1) \\ &= ab - a - b + 1 \\ &= ab - (a+b) + 1 \\ &= 1 - 3 + 1 \\ &= -1. \end{aligned}$$

$$\begin{aligned} & a^3b + ab^3 \\ &= ab(a^2 + b^2) \\ (2) &= ab[(a^2 + b^2 + 2ab) - 2ab] \\ &= ab(a+b)^2 - 2(ab)^2 \\ &= 1 \times 3^2 - 2 \times 1^2 \\ &= 7. \end{aligned}$$

$$23. (1)$$

$$\begin{aligned} & (x-1)^2 - x(x-3) + (x+2)(x-2) \\ &= x^2 - 2x + 1 - x^2 + 3x + x^2 - 4 \\ &= x^2 + x - 3. \end{aligned}$$

$$\because x^2 + x - \frac{1}{2} = 0,$$

$$\therefore x^2 + x = \frac{1}{2}.$$

$$\therefore \text{原式} = \frac{1}{2} - 3$$

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

(2)

$$\begin{aligned} \text{原式} &= 2b^2 + a^2 - b^2 - (a^2 + b^2 - 2ab) \\ &= 2b^2 + a^2 - b^2 - a^2 - b^2 + 2ab \\ &= 2ab. \end{aligned}$$

$$\text{当 } a = -3, b = \frac{1}{2} \text{ 时.}$$

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

$$= -3$$

$$24. \because a^2 + 2b^2 - 2ab - 2b + 1 = 0,$$

$$\therefore (a^2 - 2ab + b^2) + (b^2 - 2b + 1) = 0,$$

$$\therefore (a-b)^2 + (b-1)^2 = 0,$$

$$\therefore \begin{cases} a-b=0, \\ b-1=0, \end{cases}$$

$$\therefore \begin{cases} a=1, \\ b=1. \end{cases}$$

$$\therefore a+b = 1 + 2 \times 1$$

$$= 3$$

$$25. \because AD \perp BC, FG \perp BC \text{ (已知),}$$

$$\therefore \angle ADC = \angle FGC = 90^\circ \text{ (垂直的意义),}$$

$$\therefore AD \parallel FG \text{ (同位角相等, 两直线平行),}$$

$$\therefore \angle 1 = \angle 3 \text{ (两直线平行, 同位角相等),}$$

$$\text{又因为 } \angle 1 = \angle 2 \text{ (已知),}$$

$$\therefore \angle 2 = \angle 3 \text{ (等量代换),}$$

$$\therefore \text{以 } DE \parallel AC \text{ (内错角相等, 两直线平行),}$$

$$\therefore \angle BDE = \angle C \text{ (两直线平行, 同位角相等).}$$

$$26. (1) \text{ 设参加春游的学生共 } x \text{ 人, 原计划租用 } 45 \text{ 座客车 } y \text{ 辆.}$$

$$\text{根据题意, 得 } \begin{cases} 45y + 15 = x, \\ 60(y-1) = x. \end{cases}$$

$$\text{解这个方程组, 得 } \begin{cases} x = 240, \\ y = 5. \end{cases}$$

$$\text{答: 春游学生共 } 240 \text{ 人, 原计划租 } 45 \text{ 座客车 } 5 \text{ 辆;}$$

$$(2) \text{ 租 } 45 \text{ 座客车: } 240 \div 45 \approx 5.3$$

$$\text{(辆),}$$

所以需租 6 辆，租金为 $220 \times 6 = 1320$
(元)。

租 60 座客车： $240 \div 60 = 4$ (辆)，
所以需租 4 辆，租金为 $300 \times 4 = 1200$
(元)。

答：租用 4 辆 60 座客车更合算。