

2025 年下学期期末教学质量检测试卷

八年级数学参考答案及评分标准

一、**选择题**.本题共 10 小题，每小题 3 分，在每小题给出的四个选项中，只有一项是符合题目要求的。

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

二、**填空题**.本题共 6 小题，每小题 3 分，把答案填在答题卷中对应题号后的横线上。

11. 8 12. $x \geq 1$

13. $\frac{\sqrt{2}}{2}$ 14. 14.5

15. 135 16. 48

三、**解答题**.本题共 8 小题，共 72 分.解答应写出文字说明、证明过程或演算步骤。

17.

(1)解：原式= $2x(x^2-2xy+y^2)$
 $=2x(x-y)^2$

(2) $(x+2)(x+3)$

注：未写出十字交叉形象分析不扣分.

注：未分解彻底不给分.

18.

(1)

$$\frac{2}{a-1} \div \frac{2a-4}{a^2-1} + \frac{1}{2-a}$$

$$= \frac{2}{a-1} \cdot \frac{(a+1)(a-1)}{2(a-2)} - \frac{1}{a-2}$$

$$= \frac{a+1}{a-2} - \frac{1}{a-2}$$

$$= \frac{a}{a-2};$$

(2) 解：去分母得 $3x(x-2)-2(x+2)=3(x+2)(x-2)$ 、

去括号得 $3x^2-6x-2x-4=3x^2-12$

移项、合并同类项得 $-8x=-8$

解得 $x=1$

经检验 $x=1$ 是原方程的解.

过程清晰，结果正确,每小题给满分 4 分；过程清晰，结果错误，视过程给 1-3 分，只有结果不给分。

19.

答案: (1) $\frac{b^5}{a^2}$ (或 $a^{-2}b^5$)

(2) $2a - 2b$

过程清晰, 结果正确, 每小题给满分 4 分; 过程清晰, 结果错误, 视过程给 1-3 分, 只有结果不给分。

20.

证明: $\because AD \parallel BC$

$\therefore \angle DAF = \angle BCE$ (2 分)

$\because FD \parallel BE$

$\therefore \angle DFE = \angle BEF$ (3 分)

$\therefore 180^\circ - \angle DFE = 180^\circ - \angle BEF$

$\therefore \angle AFD = \angle BEC$ (4 分)

在 $\triangle ADF$ 与 $\triangle CBE$ 中

$\begin{cases} \angle DFE = \angle BEF \\ \angle AFD = \angle BEC \\ AD = BC \text{ (已知)} \end{cases}$ (6 分)

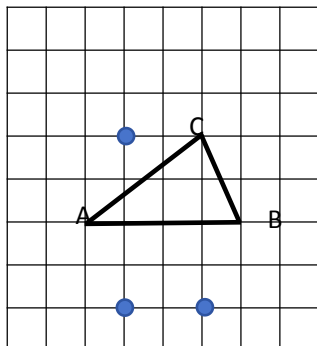
$\therefore \triangle ADF \cong \triangle CBE (AAS)$ (8 分)

注: 未写 AAS (或角角边) 扣 1 分.

21.(1)略

注: 未使用作图工具但逻辑正确给 3 分.

(2) (每点 1 分)



22.

(1) 证明: $\because \angle C = \angle D = 90^\circ$

$\therefore \triangle ABC$ 与 $\triangle BAD$ 均是直角三角形 (2 分)

在 $\text{Rt}\triangle ABC$ 与 $\text{Rt}\triangle BAD$ 中,

$\begin{cases} AB = BA \text{ (公共边)} \\ AC = BD \text{ (已知)} \end{cases}$

$\therefore \text{Rt}\triangle ABC \cong \text{Rt}\triangle BAD (HL)$ (4 分)

$\therefore AD = BC$ (5 分)

(2)解: 在 $\text{Rt}\triangle ABC$ 中 $\angle C=90^\circ$ $\frac{8\sqrt{3}}{3}$

$$\because \angle C=90^\circ, AC=4, AB=8$$

$$\therefore \angle ABC=30^\circ, \angle BAC=60^\circ \dots\dots\dots (2 \text{ 分})$$

由 (1) $\text{Rt}\triangle ABC \cong \text{Rt}\triangle BAD$

$$\therefore \angle DAB = \angle ABC = 30^\circ$$

$$\begin{aligned} \therefore \angle CAE &= \angle BAC - \angle DAB \\ &= 60^\circ - 30^\circ \\ &= 30^\circ \end{aligned} \dots\dots\dots (3 \text{ 分})$$

$\therefore$ 在 $\text{Rt}\triangle ACE$ 中, $CE = \frac{1}{2}AE$, 设 CE 为 x , 则 $AE=2x$, 由勾股定理有

$$CE^2 + AC^2 = AE^2 \quad \text{即 } x^2 + 4^2 = (2x)^2 \dots\dots\dots (4 \text{ 分})$$

$$\text{解得 } x = \frac{4\sqrt{3}}{3}$$

$$\therefore AE = 2x = \frac{8\sqrt{3}}{3} \dots\dots\dots (5 \text{ 分})$$

23.

$$\begin{aligned} \text{解: (1)} \quad & \frac{1}{x(x+1)} + \frac{1}{(x+1)(x+2)} + \dots + \frac{1}{(x+2025)(x+2026)} \\ &= \frac{1}{x} - \frac{1}{x+1} + \frac{1}{x+1} - \frac{1}{x+2} + \dots + \frac{1}{x+2025} - \frac{1}{x+2026} \end{aligned} \dots\dots\dots (1 \text{ 分})$$

$$= \frac{1}{x} - \frac{1}{x+2026} \dots\dots\dots (2 \text{ 分})$$

$$= \frac{2026}{x(x+2026)} \dots\dots\dots (3 \text{ 分})$$

$$(2) \quad \text{计算 } \frac{1}{x} - \frac{1}{x+2} = \frac{x+2-x}{x(x+2)} = \frac{2}{x(x+2)} \dots\dots\dots (2 \text{ 分})$$

$$\therefore \frac{1}{x(x+2)} = \frac{1}{2} \times \frac{2}{x(x+2)} = \frac{1}{2} \left(\frac{1}{x} - \frac{1}{x+2} \right) \dots\dots\dots (3 \text{ 分})$$

$$(3) \quad \frac{1}{x(x+2)} + \frac{1}{(x+2)(x+4)} + \dots + \frac{1}{(x+98)(x+100)} = \frac{2}{x+100}$$

$$\frac{1}{2} \left(\frac{1}{x} - \frac{1}{x+2} \right) + \frac{1}{2} \left(\frac{1}{x+2} - \frac{1}{x+4} \right) + \dots + \frac{1}{2} \left(\frac{1}{x+98} - \frac{1}{x+100} \right) = \frac{2}{x+100} \dots\dots\dots (1 \text{ 分})$$

$$\frac{1}{2} \left(\frac{1}{x} - \frac{1}{x+2} + \frac{1}{x+2} - \frac{1}{x+4} + \dots + \frac{1}{x+98} - \frac{1}{x+100} \right) = \frac{2}{x+100} \dots\dots\dots (2 \text{ 分})$$

$$\frac{1}{2} \left(\frac{1}{x} - \frac{1}{x+100} \right) = \frac{2}{x+100} \dots\dots\dots (3 \text{ 分})$$

$$\text{解得 } x=25 \dots\dots\dots (4 \text{ 分})$$

24.

(1) 证明:

$\because \angle BAC = 90^\circ, AB = AC, AD \perp BC$ 于点 D .

$\therefore \angle B = \angle C = \angle DAF = 45^\circ$

$DB = DC = DA$ (1 分)

$\because AD \perp BC$

$\therefore \angle BDE + \angle EDA = 90^\circ$

$\because \angle EDF = 90^\circ$

$\therefore \angle EDA + \angle ADF = 90^\circ$

$\therefore \angle BDE = \angle ADF$ (2 分)

在 $\triangle BDE$ 和 $\triangle ADF$ 中

$$\begin{cases} \angle B = \angle DAF \\ DB = DA \\ \angle DBE = \angle ADF \end{cases}$$

$\therefore \triangle BDE \cong \triangle ADF (ASA)$ (3 分)

$\therefore BE = AF$ (4 分)

(2) 解: $\because \angle BAC = 90^\circ, AB = AC, AD \perp BC$

$\therefore AD = BD = DC, \angle ABC = \angle ACB = 45^\circ, \angle BAD = \angle CAD = 45^\circ$

$\because AB = 2$

$\therefore AD = BD = DC = \sqrt{2}$ (1 分)

$\because \angle AMN = 30^\circ$

$\therefore \angle BMD = 180^\circ - 90^\circ - 30^\circ = 60^\circ$

$\therefore \angle MBD = 30^\circ$

$\therefore BM = 2DM$ (2 分)

由勾股定理得, $BM^2 - DM^2 = BD^2$, 即 $(2DM)^2 - DM^2 = (\sqrt{2})^2$

解得, $DM = \frac{\sqrt{6}}{3}$ (3 分)

$\therefore AM = AD - DM = \sqrt{2} - \frac{\sqrt{6}}{3}$ (4 分)

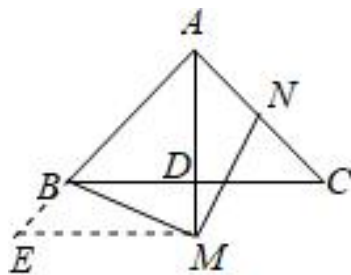


图 3

(3) 证明：过点 M 作 $ME \parallel BC$ 交 AB 的延长线于 E

$\therefore \angle AME = 90^\circ$ (1 分)

则 $\angle E = 45^\circ$ $AE = \sqrt{2}AM$,

$\therefore ME = MA$,

$\because \angle AME = 90^\circ$, $\angle BMN = 90^\circ$,

$\therefore \angle BME = \angle AMN$ (2 分)

在 $\triangle BME$ 和 $\triangle AMN$ 中

$$\begin{cases} \angle E = \angle MAN \\ ME = MA \\ \angle BME = \angle AMN \end{cases}$$

$\therefore \triangle BME \cong \triangle AMN (ASA)$

$\therefore BE = AN$ (3 分)

$\therefore AB + AN = AB + BE = AE = \sqrt{2}AM$ (4 分)