

2017~2018学年深圳罗湖区高一下学期期末理科数学试卷

一、选择题

1 A 2 A 3 D 4 D 5 C 6 C 7 D 8 B 9 B 10 A 11 C

12 C

二、填空题

13 $(-\sqrt{2}, \sqrt{2})$

14 $\frac{12}{5}$

15 $\frac{1}{2}$

16 1475

三、解答题

17 (1) $\overrightarrow{AE} = \frac{1}{2}\overrightarrow{a} + \overrightarrow{b}$;
 $\overrightarrow{DM} = -\frac{1}{3}\overrightarrow{a} + \frac{1}{3}\overrightarrow{b}$.

(2) -2 .

18 (1) $\frac{\sqrt{6}}{2}$.

$$(2) \frac{\sqrt{7}}{2}.$$

19 (1) $b = \sqrt{3}.$

$$(2) \frac{3\sqrt{3}}{4}.$$

20 (1) $a_n = 3^n.$

$$(2) T_n = \begin{cases} 6, n = 1 \\ 15, n = 2, 3 \\ \frac{(2n-7) \cdot 3^{n+1} + 141}{4}, n \geq 4 \end{cases}.$$

21 (1) $y = 2 \sin\left(\frac{\pi}{6}t - \frac{\pi}{2}\right) + 3, (0 \leq t \leq 24).$

$$(2) 6 \text{ 小时}.$$

22 (1) $a_n = 1 + \left(-\frac{1}{3}\right)^n.$

$$(2) \lambda \text{ 取值为: } 3, 4, 5, 6, 7.$$