

Math Kangaroo 2007 Sample Questions - Levels 7 & 8

1. $\frac{2007}{2+0+0+7} =$

- A) 1003 B) 75 C) 223 D) 213 E) 123

2. Rose bushes are planted in a line on both sides of a path. The distance between the bushes is 2 m. What is the largest number of bushes that can be planted if the path is 20 m long?

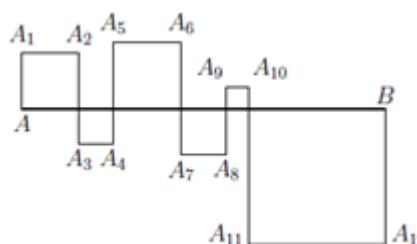
- A) 22 B) 20 C) 12 D) 11 E) 10

11. x is a strictly negative integer. Which of the expressions is the greatest?

- A) $x + 1$ B) $2x$ C) $-2x$ D) $6x + 2$ E) $x - 2$

12. The squares shown in the picture are formed by sections of segment AB ($AB = 24$ cm) and by the line segments $AA_1A_2A_3 \dots A_{11}A_{12}B$. Find the length of $AA_1A_2A_3 \dots A_{11}A_{12}B$.

- A) 106 cm B) 96 cm C) 72
 cm
 D) 56 cm E) 48 cm



21. A certain broken calculator does not display the digit 1. For example, if we type in the number 3131, only the number 33 is displayed, with no spaces. Mike typed a 6-digit number into that calculator, but only 2007 appeared on the display. How many different numbers could Mike have typed?

- A) 12 B) 13 C) 14 D) 15 E) 16

22. A man took a 2 hour walking tour. At first, the road was level, and then he had to climb uphill. Going back he went downhill at first, and then he was on level ground again. The whole trip took him 2 hours. How many kilometers did he travel if his speed was 4 km/hr on the level part, 3 km/hr when he was going uphill, and 6 km/hr when he was going downhill?

- A) Not enough information B) 6 km C) 7.5 km D) 8 km E) 10 km