

EAA admissions test grade 3

- 1.) Write as an inequality, use the absolute value sign: $\{\dots - 8, -7, -6, 6, 7, 8 \dots\}$
- 2.) Remove all grouping symbols and simplify these algebraic expressions as much as possible:
 - (1) $3x^3 + (-3x)^3 + 3(-x)^3 =$
 - (2) $6zb^4 \cdot (-5zb)^2 =$
- 3.) (1) Write this number in the scientific notation: $13000000000 =$
(2) Write this number without using the scientific notation: $3.705 \cdot 10^6 =$
- 4.) Expand: $(5 - x)^2 =$
- 5.) Fill in the gaps. Use the special binomial products!
 - (1) $(\dots - \dots)^2 = \dots - 60a + 100$
 - (2) $(\frac{y}{2} + \dots) \cdot (\dots - \dots) = \dots - 16x^2$
- 6.) Factorize: $2a \cdot b - 3c - b - 3c =$
- 7.) Rearrange this formula making the variable **a** the subject of the formula.
 $2y + \frac{a}{3} = 1$
- 8.) Express each of these ratios in its simplest form:
 $30 \text{ kg} : 2 \text{ t} =$ $5 \text{ m}^2 : 15 \text{ cm}^2 =$ $\frac{5}{21} : \frac{5}{28} =$
- 9.) Translate this text into an equation and then solve it!
Twice a number is the same as one quarter of this number added to 21. Find the number.
- 10.) The ratio of apples to plums to bananas is 2 : 7 : 4.
If there are 49 plums, how many fruits are there altogether?
- 11.) An area having the shape of a kite ($e = 9 \text{ m}$; $f = 5 \text{ m}$) is to be tiled. The tiles are rhombus-shaped ($a = 38 \text{ cm}$; $h_a = 24 \text{ cm}$). Find the number of tiles needed, if the expected waste is 25%.