

#1 The number of letters in the (English) alphabet: 26

#2 Factor the following completely: $x^2 - x - 2$

$$\underline{(x - 2)(x + 1)}$$

#3 Factor the following completely: $x^4 - 16$

$$(x^2 + 4)(x^2 - 4) = \underline{(x^2 + 4)(x + 2)(x - 2)}$$

#4 Evaluate: $3 + 12 / 4 + 1$

$$3 + 12 / 4 + 1 \rightarrow 3 + (12/4) + 1 \rightarrow 3 + 3 + 1 \rightarrow \underline{7}$$

#5 Multiply out: $(x - 1)(x + 5)$

$$x^2 + 5x - 1x - 5 = \underline{x^2 + 4x - 5}$$

#6 Solve by any method: $x^2 - 2x = -1$

$$x^2 - 2x + 1 = 0 = (x - 1)^2 \rightarrow \underline{x = 1}$$

#7 Solve by any method: $x(x - 2)(x + 3) = 0$

$$\underline{x \in \{-3, 0, 2\}}$$

#8 Simplify, if possible. If not possible, write "not possible": $\frac{x+1}{x+2}$

Not Possible (but any valid manipulation accepted)

#9 Simplify, if possible. If not possible, write "not possible": $\sqrt{x^2 + y^2}$

Not Possible (but any valid manipulation accepted)

#10 What is $\cos(\pi)$? -1

#11 What is 18 (base-10) expressed in binary? 10010. In hexadecimal? 12.

#12 What is $\ln(e^{5x})$? 5x

#13 What is $\log_{12}(144)$? 2

#14 What is $\ln(1)$? 0

#15 What is $e^{\ln(2)}$? 2