

GRADE 12 QUIZ – JUNE 2020

[MATHS SOLUTIONS]

1. $\log_2 \left(\frac{a}{b} \right)^4$ can be written as
- (a) $4\log_2 a + 4\log_2 b$
 - (b) $4\log_2 a - 4\log_2 b$
 - (c) $4 + \log_2 a + \log_2 b$
 - (d) $\frac{4\log_2 a}{b}$
2. Jabu needs R40 000 for university in 2 years time. How much should he pay weekly into an annuity that offers 6% per annum, compounded weekly?
- (a) R362.22
 - (b) R384.62
 - (c) R5.62
 - (d) R1572.82
3. If $f(x) = x^2 - 4$, then the inverse is
- (a) $f^{-1}(x) = x^2 + 4$
 - (b) $f^{-1}(x) = \sqrt{x} + 4$
 - (c) $f^{-1}(x) = 4 - x^2$
 - (d) $f^{-1}(x) = \sqrt{x+4}$
4. How many terms of the series $3 + 6 + 12 + \dots$ have to be taken so that the sum is 393 213?
- (a) 16
 - (b) 17
 - (c) 18
 - (d) 19
5. An angle in the second quadrant has a tangent of $-\frac{\sqrt{3}}{2}$. The cosine of this angle is
- (a) $\frac{2}{\sqrt{7}}$
 - (b) $\frac{\sqrt{3}}{2}$
 - (c) $-\frac{2}{\sqrt{3}}$
 - (d) $-\frac{2}{\sqrt{7}}$

[PHYSICAL SCIENCE SOLUTIONS]

- Resting on a frictionless surface, a 1000 kg cannon fires a 10 kg cannonball horizontally at a speed of $20 \text{ m}\cdot\text{s}^{-1}$. At what speed does that cannon recoil in the opposite direction?
 - $0 \text{ m}\cdot\text{s}^{-1}$
 - $0.2 \text{ m}\cdot\text{s}^{-1}$
 - $0.5 \text{ m}\cdot\text{s}^{-1}$
 - $20 \text{ m}\cdot\text{s}^{-1}$
- The term “freefall” means
 - no forces act on an object except for gravity.
 - an object is thrown straight down.
 - an object is dropped such that its initial speed is $0 \text{ m}\cdot\text{s}^{-1}$.
 - the speed of a falling object remains constant.
- Which compound is a member of the same homologous series as C_3H_6 ?
 - C_2H_4
 - C_2H_6
 - C_3H_4
 - C_3H_8
- Calculate the work done on an object moved 10 m by a 10 N force at a 45° angle.
 - 7 J
 - 50 J
 - 71 J
 - 100 J
- Metal is left behind once a reaction between a magnesium strip and acid is completed. Which of the following statements is true?
 - Magnesium is the limiting reagent
 - The acid is the limiting reagent
 - The acid is in excess
 - You can't tell which reagent is the limiting reagent