

PENANG SANGAM HIGH SCHOOL**YEAR 12 MATHS – WORKSHEET 5**

1. When simplified $\frac{x^2-3x}{x}$ is [factorize then cancel common factors]
- A. $\frac{x-3}{x}$
B. $x - 3$
C. $x - 3x$
D. $x + 3$
2. When $2x^3 - 5x^2 + 3x - 5$ is divided by $x - 3$, then the remainder is
- A. 7 [use remainder theorem, page 68]
B. 8
C. 13
D. 12
3. $x^3 - 2kx + 4$ has a factor of $x - 2$. What is the value of k?
- E. 1 [use factor theorem, page 71]
A.
B. 2
C. 3
D. 4
4. What is the 20th term of this sequence 10, 14, 18..., ...?
- A. 36 [Hint: use $t_n = a + (n - 1)d$
B. 52
C. 116
D. 86
5. The value of $\sum_{n=1}^4(2n + 1)$ is: [Hint: examples on page 74]
- A. 3 B.9 C.21 D.24

6. Solve $7^{5x+3} = 512$ [Hint: example 4, page31]

7. Express $\sqrt{3} + \sqrt{12} + \sqrt{27}$ in the form $x\sqrt{3}$ where x is an integer. [Hint: example 2d, page35]

8. Simplify $\frac{5+\sqrt{5}}{1+\sqrt{5}}$ by rationalizing the denominator. [Hint: example 2, page37]

9. Write as a single log: $\log 2 + \frac{1}{2} \log 16 - \log 4$ [Hint: example 6, page 28]

$$\log a^b = b \log a$$

$$\log a + \log b = \log ab$$

$$\log a - \log b = \log \frac{a}{b}$$

10. When the equation $2x^2 - 5x + c$ is divided by $(2x + 3)$ it has a remainder of 6. Find the value of c . [use remainder theorem, page 68]

The end