

PENANG SANGAM HIGH SCHOOL
YEAR 12 MATHS – WORKSHEET 4

1. The solution for $5 - 3x \leq 8$ is

- A. $x \leq -1$
- B. $x \geq -1$
- C. $x > -1$
- D. $x < -1$

2. When simplified $\frac{a+3}{2} - \frac{a-3}{3}$ as a single fraction is [Hint: combine using common denominators]

- A. $\frac{a+3}{6}$
- B. $\frac{3a+15}{6}$
- C. $\frac{a+15}{6}$
- D. $\frac{5a+15}{6}$

3. When simplified $\frac{15x^{-3}y^2}{(3x^{-2}y^4)^2}$ is [Hint: example1 page22]

- A. $\frac{5x}{3y}$
- B. $\frac{5x}{3y^2}$
- C. $\frac{5x}{3y^6}$
- D. $\frac{3x}{5y^6}$

4. Make n the subject of the formula in $c =$ [Hint: page 46]

5. Solve $\frac{x+3}{3} - \frac{x-2}{2} = -3$ [Hint: combine the two fractions with common denominator then

remove the denominator and solve

Similar to example 2, page 41 of text book.]

6. Determine the values of k for which the equation $2x^2 - kx + 8 = 0$ has 2 distinct real roots. [Hint: $\Delta = b^2 - 4ac$, 2 distinct real roots means $b^2 - 4ac > 0$]

7. Arnav and Ashika save \$10 in the first week of a savings program, \$30 in the second week, \$50 in the third week, \$70 in the fourth week and so on in an arithmetic sequence.

$\langle 10, 30, 50, 70, \dots \rangle$

How long will they have to continue saving if there target is to save \$81000?

[Hint: use $s_n = \frac{n}{2}(2a + (n-1)d)$, find n]

8. Consider the sequence $\langle 3, 6, 12, 24, \dots \rangle$

a. Find the 12th term of the sequence. [Hint: use $t_n = ar^{n-1}$]

b. How many terms of this sequence must be added together to give 786429?

[Hint: use $s_n = \frac{a(1-r^n)}{1-r}$, find n]

9. Find the values of m and n given $x^2 - 4x + 7 = (x - m)^2 + n$. [Hint: use completing the square method, examples on page 55 of textbook]

The End