

WORKSHEET- 1(5 <sup>TH</sup> April to 16 <sup>th</sup> April, 2020)
SUBJECT: PURE MATHEMATICS, CLASS: VIII
SENIOR SCHOOL, UTTARA TEACHER: AFSANA ZESMIN
(DAY 1) : TOPIC: SIMULTANEOUS EQUATION
1. Solve the following equations:
I) $x = y + 4, x^2 + y^2 = 4x + 2y$
II) $x + y = 4, x^2 - y = 8$
III) $x - 2y = 5, 3x + 2y^2 = 11$
2. Calculate the coordinates of the points of intersection of the line $5x - 3y = 12$ and the curve $\frac{3x}{y} - \frac{2y}{x} = 1$ .
3. Find the coordinates of the points where the line $y = 2x - 5$ meets the curve $xy = 12$ .
# PLEASE VISIT <a href="http://www.mathsteacher.com.au">www.mathsteacher.com.au</a>
(DAY2): TOPIC: FACTOR & REMAINDER THEOREM
1. Find the remainder when
I) $x^3 + 3x^2 + 2x - 1$ is divided by $x - 3$ .
II) $4x^3 - 2x^2 + 7x - 4$ is divided by $3x + 2$ .
2. Solve: $\frac{x}{x+1} - \frac{1}{x+2} = 2$ .
3. If $(x + 2)$ is a factor of $x^2 + ax + a$ , find the value of $a$ .
4. Given that $x - 2b$ is a factor of $ax^2 - x - a$ , find an expression for $a$ in terms of $b$ .
# PLEASE VISIT <a href="http://www.khanacademy.org">www.khanacademy.org</a> >.....> <a href="#">PolynomialRemainderTheorem</a>
(DAY3): TOPIC: FACTOR & REMAINDER THEOREM
1. $f(x) = 2x^3 + px^2 - 5x + 6$ ; Given that $(x - 4)$ is a factor of $f(x)$ .
i) Show that the value of $p$ is 3.
ii) Using the value of $p$ , find the remainder when $f(x)$ is divided by $(x + 2)$ .
iii) Factorize $f(x)$ completely.
iv) Solve the equation $2x^3 + px^2 - 5x + 6 = 0$ .
2. $f(x) = x^3 - 7x + 6$
i) Show that $(x - 2)$ is a factor of $f(x)$ .
ii) Hence, or otherwise, factorize $f(x)$ completely.
iii) Solve the equation $f(x) = 0$ .
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(DAY4): TOPIC: FACTOR & REMAINDER THEOREM
1. $f(x) = x^3 + 5x^2 + px - q$ ; Given that $(x - 1)$ and $(x + 2)$ are factors of $f(x)$ .
i) Form a pair of simultaneous equations in $p$ and $q$ .
ii) Show that $p=2$ and find the value of $q$ .
iii) Factorize $f(x)$ completely.
2. $f(x) = ax^3 + bx^2 + cx + d$ ; Given that $f(0)= 6$
i) Show that $d= 6$ .
ii) Find the value of $b$ , when $f(x)$ is divided by $(x + 1)$ and $(x - 1)$ the remainder is 12 and -6 respectively.
iii) Given also that $(x - 3)$ is a factor of $f(x)$ , find the value of $a$ and the value of $c$ .
iv) Express $f(x)$ as a product of linear factors.
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