



Core Mathematics C34(GCE)

Practice Question 11

Standard A[★]

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**CRITICAL THINKING IS THE KEY TO SOLVE REAL WORLD PROBLEMS.
CHILDREN MUST BE TAUGHT HOW TO THINK, NOT WHAT TO THINK.
A GREAT TEACHER WILL BE CREATING STUDENTS TO DO NEW THINGS
THROUGH CRITICAL THINKING, NOT SIMPLY REPEATING WHAT OTHER
GENERATIONS HAVE DONE BEFORE. WE DO NOT NEED ANOTHER
ALBERT EINSTEIN OR ISAAC NEWTON.... WE NEED A PERSON BETTER
THAN THEM.**

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Remainder theorem

Question:

When the polynomial $P(x)$ is divided by $(x - 1)$, the remainder is 5 and when $P(x)$ is divided by $(x - 2)$, the remainder is 7.

Find the remainder when $P(x)$ is divided by $(x - 1)(x - 2)$

(5 marks)

Golden Rules

If $\frac{p(x)}{(x-a)} = q(x)$ with remainder $r(x)$

Then $p(x) = (x-a)q(x) + r(x)$

The Remainder Theorem says that we can restate the polynomial in terms of divisor, and then evaluate the polynomial at $x = a$

$$\begin{aligned} p(a) &= (a-a)q(a) + r(a) \\ &= (0)q(a) + r(a) \\ &= 0 + r(a) \\ &= r(a) \end{aligned}$$

Traditional or Online classes

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