Remainder Theorem

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When we divide two polynomials, we get:

$$\frac{P(x)}{D(x)} = Q(x) + \frac{R(x)}{D(x)}$$

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Recall When we divide two polynomials, we get:

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We saw that multiplying by $D(x)$ let us re-write this as:

$$P(x) = D(x) \cdot Q(x) + R(x)$$

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Where the $degree(R) < degree(D)$

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Let's look at a special case of dividing by $x - k$

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Conclusion: The remainder r from $\dfrac{P(x)}{x - k}$ is $P(k)$