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## Coefficient in Binomial Expansion | Past Paper Question | OCR C2 June 2013 Q3(ii)

Given coefficient of  $x = 4416$

$$(3+cx)^2(2+5x)^6 \equiv (9+6cx+c^2x^2)(64+960x+6000x^2+\dots)$$

Coefficient of  $x$

$$\therefore 9(960) + 6c(64) = 4416$$

$$\therefore 8640 + 384c = 4416$$

$$\therefore 384c = -4224$$

$$\therefore c = \frac{-4224}{384}$$

$$\therefore c = -11$$



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