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	$f(x) = (2-5x)^{-2}, x < \frac{2}{5}.$
Į	Find the binomial expansion of $f(x)$, in ascending powers of x , as far as the term in x^3 , giving each coefficient as a simplified fraction. (5)

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1.	$f(x) = (3+2x)^{-3}, x < \frac{3}{2}.$	
Fi	nd the binomial expansion of $f(x)$, in ascending powers of x , as far as the term in x^3 .	
Gi	ive each coefficient as a simplified fraction.	
	(5))
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2.	(a)	Use the	binomial	theorem	to expand
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$$(8-3x)^{\frac{1}{3}}$$
, $|x| < \frac{8}{3}$,

in ascending powers of x, up to and including the term in x^3 , giving each term as a simplified fraction.

(5)

(b)	Use your expansion, with a suitable value of x, to obtain an approximation to $\sqrt[3]{7}$.	7)
	Give your answer to 7 decimal places.	

Give your answer to 7 decimal places.	(2)

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5. (a) Expand $\frac{1}{\sqrt{(4-3x)}}$, where $|x| < \frac{4}{3}$, in ascending powers of x up to and including the term in x^2 . Simplify each term.

(5)

(b) Hence, or otherwise, find the first 3 terms in the expansion of $\frac{x+8}{\sqrt{(4-3x)}}$ as a series in ascending powers of x.

(4)

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Find the binomial in x^3 . Give each c	expansion of $f(x)$ in ascending powers of x , up to coefficient as a simplified fraction.	and including the term
		(6)



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1. (a) Find the binomial expansion of

$$\sqrt{(1-8x)}, \quad \left|x\right| < \frac{1}{8},$$

in ascending powers of x up to and including the term in x^3 , simplifying each term. (4)

- (b) Show that, when $x = \frac{1}{100}$, the exact value of $\sqrt{(1-8x)}$ is $\frac{\sqrt{23}}{5}$.
- (c) Substitute $x = \frac{1}{100}$ into the binomial expansion in part (a) and hence obtain an approximation to $\sqrt{23}$. Give your answer to 5 decimal places.
