

Answers version O

1a	C4 Binomial expansion (simple)	$\frac{1}{2} + \frac{3}{16}x + \frac{27}{256}x^2$
1b	C4 Binomial expansion (multiply with other function)	$4 + 2x + \frac{33}{32}x^2$
2	C3 Differentiation - coordinate geometry	$\frac{3 \pm \sqrt{35}}{2}$

Answers version P

1a	C4 Binomial expansion (simple)	$\frac{1}{3} + \frac{1}{27}x + \frac{1}{162}x^2$
1b	C4 Binomial expansion (multiply with other function)	$\frac{8}{3} + \frac{17x}{27} + \frac{7x^2}{81}$
2	C3 Differentiation - coordinate geometry	$\frac{3 \pm \sqrt{7}}{2}$

Answers version Q

1a	C4 Binomial expansion (simple)	$\frac{1}{2} + \frac{5}{16}x + \frac{75}{256}x^2$
1b	C4 Binomial expansion (multiply with other function)	$4 + 3x + \frac{85x^2}{32}$
2	C3 Differentiation - coordinate geometry	$\frac{3 \pm \sqrt{5}}{2}$

Answers version R

1a	C4 Binomial expansion (simple)	$\frac{1}{2} + \frac{1}{16}ax + \frac{3a^2}{256}x^2$
1b	C4 Binomial expansion (multiply with other function)	$4 + \left(\frac{1}{2} + \frac{1}{2}a\right)x + \left(\frac{a}{16} + \frac{3}{32}\right)x^2$
2	C3 Differentiation - coordinate geometry	1.5

## Iota test version O

- (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.

(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  $x$ .
- Find the  $x$  coordinate of points on the curve  $y = \frac{3x^2+2}{2x-3}$ , where the gradient at these points is parallel to the line  $y - x = 0$ .

## Iota test version P

- (a) Expand  $\frac{1}{\sqrt{9-2x}}$ , where  $|x| < \frac{4}{3}$ , in ascending powers of  $x$  up to and including the term in  $x^2$ . Simplify each term.

(b) Hence, or otherwise, find the first 3 terms in the expansion of  $\frac{x+8}{\sqrt{9-2x}}$  as a series in ascending powers of  $x$ .
- Find the  $x$  coordinate of points on the curve  $y = \frac{3x^2+2}{2x-3}$ , where the gradient at these points is parallel to the line  $y + x = 0$ .

## Iota test version Q

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

(b) Hence, or otherwise, find the first 3 terms in the expansion of  $\frac{x+8}{\sqrt{4-5x}}$  as a series in ascending powers of  $x$ .
- Find the  $x$  coordinate of points on the curve  $y = \frac{3x^2+2}{2x-3}$ , where the gradient at these points is parallel to the line  $y + 2x = 0$ .

## Iota test version R

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

(b) Hence, or otherwise, find the first 3 terms in the expansion of  $\frac{x+8}{\sqrt{4-ax}}$  as a series in ascending powers of  $x$ .
- Find the  $x$  coordinate of the point on the curve  $y = \frac{3x^2+2}{2x-3}$ , where the gradient at these points is parallel to the line  $x = 2$ .