

Find the term independent of x in the expansion of $\left(2x^2 - \frac{2}{x}\right)^{15}$.

[3]

[illegible]

1 Find the set of values of the constant k for which the quadratic equation

$$3kx^2 + (k+8)x + 3 = 0$$

has two distinct real roots.

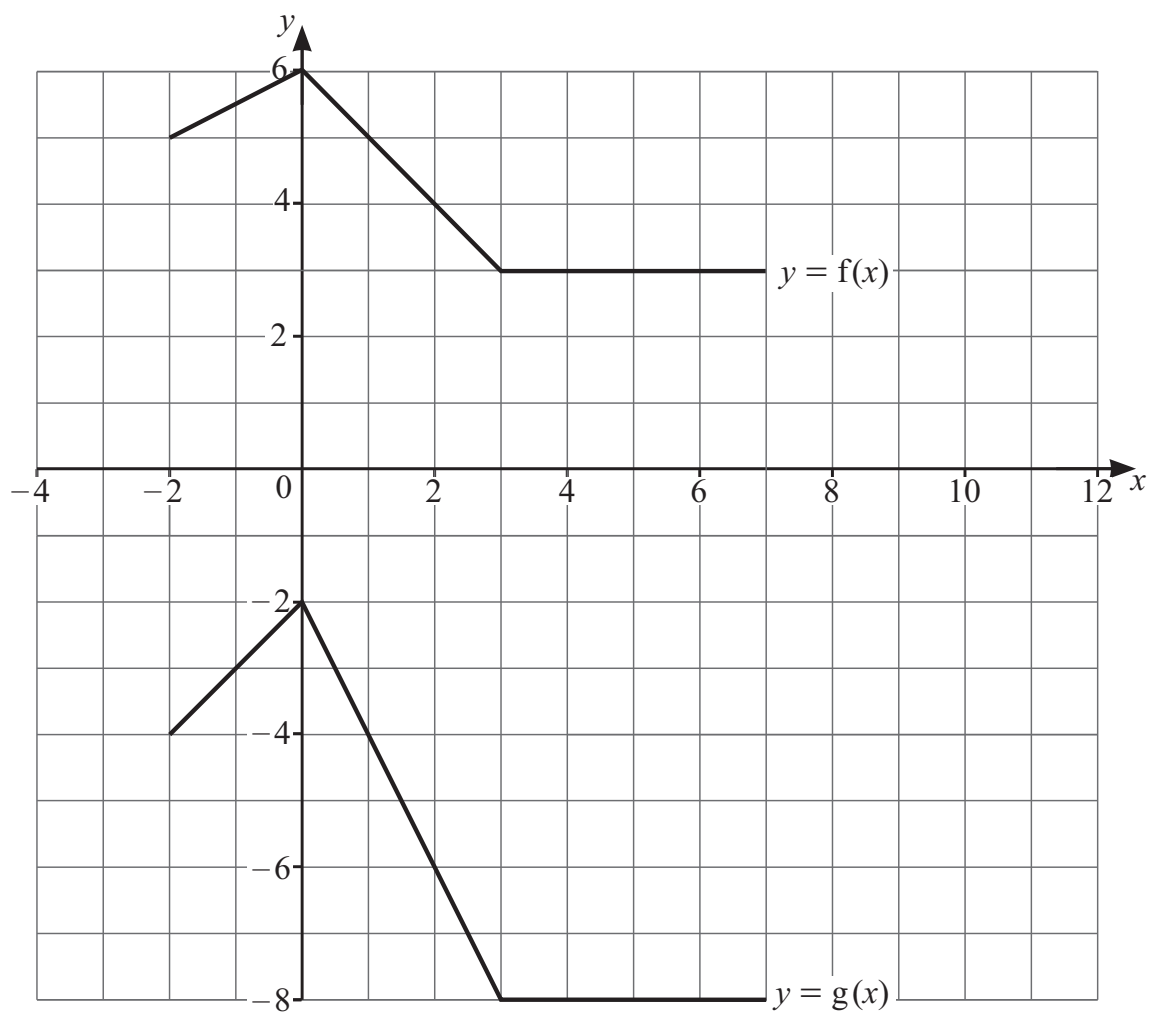
[4]

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[4]

3.

1



The diagram shows the graphs with equations $y = f(x)$ and $y = g(x)$.

Describe fully a sequence of two transformations which transforms the graph of $y = f(x)$ to the graph of $y = g(x)$. Make clear the order in which the transformations should be applied. [4]

[illegible]

2 Find the coordinates of the points of intersection of the curve and the line with equations

$$2xy + 5y^2 = 24 \quad \text{and} \quad 2x + y + 4 = 0. \quad [4]$$

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3 The coefficient of x' in the expansion of $\left(px^{\frac{1}{2}} + \frac{7}{p}x\right)$ is 1280.

Find the value of the constant p .

[4]

[illegible]