Name:

GCSE Further Maths

Solving Index Equations

Corbettmaths

Ensure you have: Pencil, Pen, Calculator

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Revision for this topic

www.corbettmaths.com/gcse-further-maths

1. Solve the equation $3^x = 40$

Give your answer to 3 significant figures.

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(2)

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2. Solve the equation $8^x = 5$

Give your answer to 3 significant figures.

.....

(2)

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3. Solve the equation $2^{-x} = 11$

Give your answer to 3 significant figures.

.....

(2)

4. Solve the equation $6^{x+3} = 14$

Give your answer to 3 significant figures.

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(2)

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5. Solve the equation $3^{5x-2} = 80$

Give your answer to 2 significant figures.

.....

(3)

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6. Solve the equation $7^{(1-2x)} = 3$

Give your answer to 3 significant figures.

.....

(3)

7. Solve the equation $14^{(\frac{3}{8}x+1)} = 5$

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(3)

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8. Solve the equation $2^{3x+1} = 5^{x+4}$

.....

(5)

9. Solve the equation $3^{2x+1} = 7^{3x-4}$

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(5)

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10. Solve the equation $15^{5-x} = 4^{3x}$

.....

(5)

11. (i) Given $8 \times 2^x = 2^y$

show that $y = x + 3$

(1)

(ii) **Hence** solve the equation $8 \times 2^x = 5^{2x-5}$

.....

(5)

11. (i) Given $9 \times 3^{5x} = 3^{y}$

show that $y = 5x + 2$

(1)

(ii) **Hence** solve the equation $9 \times 3^{5x} = 8^{x-1}$

.....

(5)