Last Minute Core 3 (AQA) Revision

1. What does the 'n' in the mid-ordinate and Simpson's rules stand for?

(1 point)

2. a) What is the value of e^0?

(1 point)

b) Where does the graph of $y = lnx$ intercept the x axis?

(3 points)

3. Sketch the following graphs with appropriate axes:

a) $sin^{-1}x$

(1 point)

b) $cos^{-1}x$

(1 point)

c) $tan^{-1}x$

(1 point)

4. What are the seven trigonometrical identities that we have used in Core 3?

(1 point each)

5. Solve $sinx = \pm(\sqrt{3})/2$ giving all values in the intervals:

a) $-180 < x < 180$

(1 point)

b) $2\pi < x < 3\pi$

(3 points)

6. a) What is a good first step in the process for solving equations such as $|x^2+3x+2| = 3$?

(1 point)

b) For what values of k do the equations $y = |2-x^2|$ and $y = k$, have 0, 2, 3 and 4 roots?

(3 points)

7. a) Given the composite function gf, how is the range of f related to the function g?

(1 point)

b) In the same composite function gf, what is the range of g restricted by?

(1 point)

c) How is the range of a function g^{-1} related to the function g?

(1 point)

8. a) For what type of function (*one to one*, *one to many*, *many to one*, *many to many*) can an inverse function be found?

(1 point)

b) How can we change a *one to many* function into a *one to one* function?

(1 point)

c) What is a *self inverse* function?

(3 points)

9. a) What is the integration by parts formula? (But don't worry too much as its on the formula sheets)

(1 point)

b) When using integration by parts is the intention to make the u (on LHS) or the dv (on LHS) simpler?

(3 points)

10. a) What is the formula for finding a volume of a revolution?

(1 point)

b) What, if anything, are the consequences of a volume revolution rotated around y axis?

(3 points)

11. a) Name the four geometrical transformations.

(1 point each)

b) For each transformation state each of the parameters.

(3 points)

12. a) Name the two types of diagram used to illustrate the iteration method?

(1 point)

b) In drawing the diagrams should your lines go up to '*up to the curve and across to the line*' or '*up to the line and across to the curve*'?

(3 points)

Last Minute Core 3 (AQA) Revision - Answers

1. What does the 'n' in the mid-ordinate and Simpson's rules stand for?

   The number of strips (or number of ordinates - 1) (1 point)

2. What is the value of e^0?

   1 (1 point)

   Where does the graph of $y = lnx$ intercept the x axis?

   At $x=1$ (3 points)

3. Sketch the following graphs with appropriate axes:

   $sin^{-1}x$

   (1 point)

   $cos^{-1}x$

   (1 point)

   $tan^{-1}x$

   (1 point)

4. What are the seven trigonometrical identities that we have used in Core 3?

   (1 point each)

5. Solve $sinx = \pm (\sqrt{3})/2$ giving all values in the intervals:

   $-180 < x < 180$

   $\pm 60, \pm 120$ (1 point)

   $2\pi < x < 3\pi$

   $20\pi/9, 23\pi/9$ (3 points)

6. What is a good first step in the process for solving equations such as $|x^2+3x+2| = 3$?

   Usually square both sides, but in this case write two separate equations equal to $+3$ & -3, to avoid having to deal with x^4 (1 point)

   For what values of k do the equations $y = |2-x^2|$ and $y = k$, have 0, 2, 3 and 4 roots?

   $k<0$, $k=0$ and $k>2$, $k=2$, $0<k<2$ (3 points)

7. Given the composite function gf, how is the range of f related to the function g?

   It's the domain of g (1 point)

   In the same composite function gf, what is the range of g restricted by?

   The domain of f (1 point)

   How is the range of a function g^{-1} related to the function g?

   It's the domain of g (1 point)

8. For what type of function (*one to one*, *one to many*, *many to one*, *many to many*) can an inverse function be found?

   One to one (1 point)

   How can we change a *one to many* function into a *one to one* function?

   Restrict the domain (1 point)

   What is a *self inverse* function?

   One where the inverse of the function is equal to the function itself, i.e. $f=f^{-1}$. (3 points)

9. What is the integration by parts formula? (But don't worry too much as its on the formula sheets)

   (1 point)

   When using integration by parts is the intention to make the u (on LHS) or the dv (on LHS) simpler?

   (3 points)

10. What is the formula for finding a volume of a revolution?

(1 point)

What, if anything, are the consequences of a volume revolution rotated around y axis?

(3 points)

11. Name the four geometrical transformations.

Enlargement (stretch), translation, rotation, reflection (1 point each)

For each transformation state each of the parameters.

(3 points)

12. Name the two types of diagram used to illustrate the iteration method?

(1 point)

13. In drawing the diagrams should your lines go up to '*up to the curve and across to the line*' or '*up to the line and across to the curve*'?

Up to the curve and across to the line (3 points)