7.7 Rearranging Harder Formulae: 30-minute Pack

EDEXCEL 1MA1 · Calculator allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Rearrange the formula $R = rk/(k + r)$ to make r the subject. Give your answer in simplest form.

(Total for Question 1 is 3 marks)

2 $y = 2\sqrt{x + 5}$. Make x the subject of the formula.

(Total for Question 2 is 3 marks)

3 Make x the subject of $y = (3x - 4)/(4x + 4)$

(Total for Question 3 is 4 marks)

4 $y = (x + 3)^2 - 9$, where $x + 3 > 0$. Make x the subject of the formula.

(Total for Question 4 is 3 marks)

© Revision Library | revisionlibrary.co.uk

5 Make x the subject of $6(x + y) = 7x + 9$

(Total for Question 5 is 3 marks)

---

6 $y = 3\sqrt{x + 2}$. Make x the subject of the formula.

(Total for Question 6 is 3 marks)

---

7 Make x the subject of $y = (3x - 2)/(x + 5)$

(Total for Question 7 is 4 marks)

© Revision Library | revisionlibrary.co.uk

Mark scheme · 7.7 Rearranging Harder Formulae: 30-minute Pack

Question 1

multiply both sides by (k + r) to obtain Rk + Rr = rk	**M1**
collect r terms to get Rk = r(k - R) or equivalent	**M1**
r = Rk/(k - R) cao	**A1**

Answer: r = Rk/(k - R)

Question 2

divides by 2	**M1**
squares both sides	**M1**
$x = (y/2)^2 - 5$ oe	**A1**

Answer: $x = (y/2)^2 - 5$

Question 3

multiplies both sides by the denominator	**M1**
expands the bracket	**M1**
collects x terms on one side and factorises	**M1**
x = (4y + 4)/(3 - 4y) oe	**A1**

Answer: x = (4y + 4)/(3 - 4y)

Question 4

$y + 9 = (x + 3)^2$	**M1**
square roots	**M1**
$x = \sqrt{y + 9} - 3$ oe	**A1**

Answer: $x = \sqrt{y + 9} - 3$

Question 5

expands the bracket	**M1**
collects x terms on one side	**M1**
x = (9 - 6y)/(-1) oe	**A1**

Answer: x = (9 - 6y)/(-1)

Question 6

divides by 3	**M1**
squares both sides	**M1**
$x = (y/3)^2 - 2$ oe	**A1**

Answer: $x = (y/3)^2 - 2$

Question 7

multiplies both sides by the denominator	**M1**
expands the bracket	**M1**
collects x terms on one side and factorises	**M1**
x = (5y + 2)/(3 - y) oe	**A1**

Answer: x = (5y + 2)/(3 - y)

© Revision Library | revisionlibrary.co.uk