2.2 Algebraic Fractions: Adding, Subtracting and Solving Equations: 10-minute Pack

AQA 8365 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Solve $x/3 + x/5 = 16$.

(Total for Question 1 is 3 marks)

2 Simplify $x/4 + 3x/5$

(Total for Question 2 is 1 mark)

3 Solve $4/(x - 3) = 6/(x + 1)$, stating any value(s) of x for which the equation is not defined.

(Total for Question 3 is 4 marks)

4 Simplify $(x^2 + 2x - 8)/(x^2 - 16)$ fully, stating any value(s) of x for which it is undefined.

(Total for Question 4 is 2 marks)

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Mark scheme · 2.2 Algebraic Fractions: Adding, Subtracting and Solving Equations: 10-minute Pack

Question 1

multiply through by common denominator 15: 5x + 3x = 240	**M1**
collect to 8x = 240	**M1**
x = 30 cao	**A1**

Answer: x = 30

Question 2

17x/20 cao	**B1**

Answer: 17x/20

Question 3

cross multiply: 4(x + 1) = 6(x - 3)	**M1**
expand and collect: 4x + 4 = 6x - 18	**M1**
x = 11 cao	**A1**
states x is not equal to 3 and x is not equal to -1	**B1**

Answer: x = 11 (x not equal to 3 or -1)

Question 4

factorise numerator: (x - 2)(x + 4); factorise denominator: (x - 4)(x + 4)	**M1**
(x - 2)/(x - 4) oe cao, with x not equal to 4 or -4	**A1**

Answer: (x - 2)/(x - 4), x not equal to 4 or -4

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