

A6 Inequalities and Modulus

P3

- 1 Solve the inequality $|2x + 1| < |x|$. [4]

9709/03/M/J/04

- 2 Given that a is a positive constant, solve the inequality

$$|x - 3a| > |x - a|. \quad [4]$$

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- 3 Solve the inequality $2x > |x - 1|$. [4]

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- 4 Find the set of values of x satisfying the inequality $|3^x - 8| < 0.5$, giving 3 significant figures in your answer. [4]

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- 5 Solve the inequality $|x - 2| > 3|2x + 1|$. [4]

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- 6 Solve the inequality $|x + 3a| > 2|x - 2a|$, where a is a positive constant. [4]

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- 7 Solve the inequality $2|x - 3| > |3x + 1|$. [4]

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- 8 Solve the inequality $|x| < |5 + 2x|$. [3]

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9 Find the set of values of x satisfying the inequality $3|x - 1| < |2x + 1|$. [4]

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10 Solve the equation $|x - 2| = \left|\frac{1}{3}x\right|$. [3]

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11 Solve the inequality $|4x + 3| > |x|$. [4]

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12 Find the set of values of x satisfying the inequality

$$|x + 2a| > 3|x - a|,$$

where a is a positive constant. [4]

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13 Solve the inequality $|3x - 1| < |2x + 5|$. [4]

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14 Solve the inequality $|x - 2| > 2x - 3$. [4]

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15 Solve the inequality $|2x - 5| > 3|2x + 1|$. [4]

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16 Solve the inequality $2|x - 2| > |3x + 1|$. [4]

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17 Solve the inequality $|2x + 1| < 3|x - 2|$. [4]

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18 Solve the inequality $|x - 3| < 3x - 4$. [4]

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19 Find the set of values of x satisfying the inequality $2|2x - a| < |x + 3a|$, where a is a positive constant. [4]

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20 Solve the inequality $3|2x - 1| > |x + 4|$. [4]

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21 Solve the inequality $|2x - 3| > 4|x + 1|$. [4]

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22 Solve the inequality $2|x + 2| > |3x - 1|$. [4]

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