

12. Solve the following equation.

$$\frac{4x-1}{4} - \frac{2x-5}{8} = 3$$

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[4]

13. Factorise the expression $12x^2 + 5x - 2$ and hence solve the equation $12x^2 + 5x - 2 = 0$.

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18. Factorise the expression $15x^2 - 19x - 10$ and hence solve the equation $15x^2 - 19x - 10 = 0$.

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21. (a) Factorise $15x^2 + 7x - 2$.

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- (b) Simplify $\frac{15x^2 + 7x - 2}{6x^2 + 4x}$.

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22. (a) Write down a value of x (where $x > 1$) for which $x^{\frac{2}{3}}$ is rational.

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- (b) Write down an irrational number whose square is rational.

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- (c) Find the value of $(\sqrt{50} - \sqrt{2})^2$.

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19. (a) Factorise the expression $18x^2 + 27x + 4$ and hence solve the equation $18x^2 + 27x + 4 = 0$.

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- (b) (i) Factorise $64x^2 - y^2$.

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- (ii) Hence, simplify $\frac{64x^2 - y^2}{8x - y}$.

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18. (a) Make x the subject of the formula

$$x^2 + 3y = 8y + 13.$$

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- (b) Factorise $3x^2 + 10x - 8$ and hence solve the equation $3x^2 + 10x - 8 = 0$.

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