

1	2	3	4	5
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FACTORISE

$$ax^2 + bx$$

$$= x(ax + b)$$

FACTORISE

$$a^2x^2 - b^2$$

$$= (ax - b)(ax + b)$$

FACTORISE

$$ax^2 + bx + c$$

multiply $a \times c$

find factors of ac which + or - to make b

split bx into two 2 parts

factorise the 1st 2 and last 2 terms

use the fact that

$$\alpha(x+2) + \beta(x+2)$$

$$= (\alpha + \beta)(x + 2)$$



Fully factorise

$$24x^2 + 4x - 4$$

FACTORISING $ax^2 + bx + c$

$$24 \times 4 = 96$$

$$\begin{array}{l|l} 1 \times 96 & 4 \times 24 \\ 2 \times 48 & 6 \times 16 \\ 3 \times 32 & 8 \times 12 \end{array}$$

$$24x^2 + 4x - 4$$

$$= 24x^2 + 12x - 8x - 4$$

$$= 12x(2x + 1) - 4(2x + 1)$$

$$= (12x - 4)(2x + 1)$$

$$= 4(3x - 1)(2x + 1)$$



Factorise

$$x(x-1)^{\frac{1}{2}} - (x-1)^{-\frac{1}{2}}$$

Pulling out a common factor

• pull out $(x-1)^{\frac{1}{2}}$

$$x(x-1)^{\frac{1}{2}} - (x-1)^{\frac{1}{2}}(x-1)^{-1}$$

$$= (x-1)^{\frac{1}{2}} \left[x - \frac{1}{x-1} \right]$$

• pull out $(x-1)^{-\frac{1}{2}}$

$$x(x-1)^{-\frac{1}{2}}(x-1)^1 - (x-1)^{-\frac{1}{2}}$$

$$= (x-1)^{-\frac{1}{2}} [x(x-1) - 1]$$

