Timester Challenge

Identities

Identify if it is an equation (=) or an identity (≡) by using the correct symbols.

$2x + 4 \square 15$

$3(x - 4) \square 3x - 12$

$x^2 - a^2 \square (x + a)(x - a)$

$2(x + 3) \square 24$

$x^2 \square 16$

$5x + 8 \square 2(x + 4) + 3x$

Bronze

Find a solution for a and b by equating the coefficients.

$(2x - 4)(x + 3) + 5 \equiv 2x^2 + ax + b$

Silver

Find a solution for a, b and c by equating the coefficients.

$2x^2 + 8x - 4 \equiv a(x + b)^2 + c$

Silver

Find a solution for a and b by equating the coefficients.

$$\frac{ax^2 + 11x + b}{x + 4} \equiv 2x + 3$$

Silver

Find a solution for a and b by equating the coefficients.

$7(ax + 3) - 2(5x + b) \equiv 4x + 13$

Gold

Find a solution for a and b by equating the coefficients.

$2(4x + 8) - 3(ax - 5) \equiv 2x + b$

Gold

Timester Challenge

Identities

Answers

Identify if it is an equation (=) or an identity (≡) by using the correct symbols.

$2x + 4 = 15$

$3(x - 4) \equiv 3x - 12$

$x^2 - a^2 \equiv (x + a)(x - a)$

$2(x + 3) = 24$

$x^2 = 16$

$5x + 8 \equiv 2(x + 4) + 3x$

Bronze

Find a solution for a and b by equating the coefficients.

$(2x - 4)(x + 3) + 5 \equiv 2x^2 + ax + b$

$2x^2 + 6x - 4x - 12 + 5 \equiv 2x^2 + 2x - 7$

$So\ a = 2$ and $b = -7$

Silver

Find a solution for a, b and c by equating the coefficients.

$2x^2 + 8x - 4 \equiv a(x + b)^2 + c$

$2(x^2 + 4x) - 4$

$\equiv 2(x + 2)^2 - 8 - 4$

$\equiv 2(x + 2)^2 - 12$

$So\ b = 2\ and\ c = -12$

Silver

Find a solution for a and b by equating the coefficients.

$$\frac{ax^2 + 11x + b}{x + 4} \equiv 2x + 3$$

$$\frac{(2x + 3)(x + 4)}{x + 4} \equiv 2x + 3$$

$$\frac{2x^2 + 11x + 12}{x + 4} \equiv 2x + 3$$

$So\ a = 2\ and\ b = 12$

Silver

Find a solution for a and b by equating the coefficients.

$7(ax + 3) - 2(5x + b) \equiv 4x + 13$

$7ax + 21 - 10x - 2b \equiv 4x + 13$

$So\ 7ax - 10x \equiv 4x$

$(14x - 10x = 4x)$

hence $a = 2$

$So\ 21 - 2b = 13$

hence $b = 4$

Gold

Find a solution for a and b by equating the coefficients.

$2(4x + 8) - 3(ax - 5) \equiv 2x + b$

$8x + 16 - 3ax + 15 \equiv 2x + b$

$So\ 8x - 3ax \equiv 2x$

$(8x - 6x = 2x)$

hence $a = 2$

$So\ 16 + 15 \equiv b$

$(16 + 15 = 31)$

hence $b = 31$

Gold