$ax = b$

▸ Start

$$ax = b$$

$$ax = b$$

- $a \neq 0$

$$ax = b$$

- $a \neq 0$

$$ax \times \frac{1}{a} \;=\; b \times \frac{1}{a}$$

$$ax = b$$

- $a \neq 0$

$$
\begin{array}{rcl}
ax \times \dfrac{1}{a} &=& b \times \dfrac{1}{a} \\
x &=& \dfrac{b}{a}
\end{array}
$$

$$ax = b$$

- $a \neq 0$

$$
\begin{aligned}
ax \times \frac{1}{a} &= b \times \frac{1}{a} \\
x &= \frac{b}{a}
\end{aligned}
$$

- $a = 0 \, , b \neq 0$

$$ax = b$$

- $a \neq 0$
$$ax \times \frac{1}{a} = b \times \frac{1}{a}$$
$$x = \frac{b}{a}$$
- $a = 0$, $b \neq 0$
$$0 \times x = b$$

$$ax = b$$

- $a \neq 0$

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\begin{aligned}
ax \times \frac{1}{a} &= b \times \frac{1}{a} \\
x &= \frac{b}{a}
\end{aligned}
$$

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$$
\begin{aligned}
0 \times x &= b \\
0 &= b
\end{aligned}
$$

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There is no solution.

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  There is no solution.

- $a = 0$, $b = 0$

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\begin{aligned}
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There is no solution.

- $a = 0\,, b = 0$

$$
\begin{aligned}
0 \times x &= 0 \\
0 &= 0
\end{aligned}
$$

The solution is all numbers.

$$ax = b$$

- $a \neq 0$
$$ax \times \frac{1}{a} = b \times \frac{1}{a}$$
$$x = \frac{b}{a}$$

- $a = 0 \, , \, b \neq 0$
$$0 \times x = b$$
$$0 = b$$
There is no solution.

- $a = 0 \, , \, b = 0$
$$0 \times x = 0$$
$$0 = 0$$
The solution is all numbers.