

8.1 Solving Equations:

$$ax = b$$

$$x/a = b$$

$$a/x = b$$

Check Your Understanding**Communicate the Ideas**

1. To solve the equation $\frac{y}{2} = \frac{5}{3}$, John first multiplied both sides by 3.
- a) Do you think John's first step is the best way to isolate the variable y ? Circle YES or NO. Give 1 reason for your answer.
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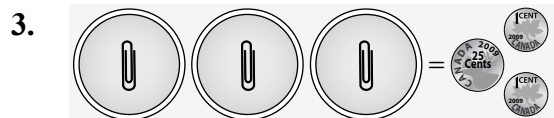
b) Show how you would solve this equation.

2. Ming solved the equation $0.3g = 0.8$. Her value for g was 2.66666.... She rounded this to the nearest tenth as 2.7. When she did her check, the left side and the right side did not exactly agree.

Left Side	Right Side
$0.3g$ $= 0.3(2.7)$ $= 0.81$	0.8

How could Ming make the left side and right side agree more closely?

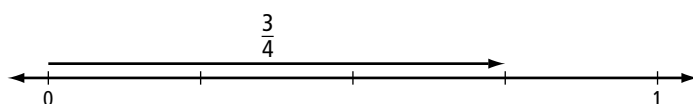
Practise



- a) What equation does the model represent? b) Solve the equation.

_____ x = _____

4. Model the solution to the equation $4x = \frac{3}{4}$ using a number line.



5. Solve.

a) $2v = -\frac{5}{6}$
 $2v \div \underline{\hspace{2cm}} = -\frac{5}{6} \div \underline{\hspace{2cm}}$
 $v = -\frac{5}{6} \times \frac{1}{\boxed{\hspace{1cm}}}$
 $v = -\frac{\boxed{\hspace{1cm}}}{\boxed{\hspace{1cm}}}$

b) $\frac{4}{3} = -1\frac{1}{4}a$
 $\frac{4}{3} \div \left(-1\frac{1}{4}\right) = -1\frac{1}{4}a \div \left(\frac{\boxed{\hspace{1cm}}}{\boxed{\hspace{1cm}}}\right)$
 $\frac{4}{3} \div \frac{\boxed{\hspace{1cm}}}{\boxed{\hspace{1cm}}} = a$
 $\frac{4}{3} \times \frac{\boxed{\hspace{1cm}}}{\boxed{\hspace{1cm}}} = a$
 $\frac{\boxed{\hspace{1cm}}}{\boxed{\hspace{1cm}}} = a$

6. Solve and check. Round your answers to the nearest tenth.

a) $1.472 = 0.46c$

Check:

Left Side	Right Side

b) $-5.6x = 3.5$

Check:

Left Side	Right Side

c) $\frac{e}{-2.2} = -0.75$

Check:

Left Side	Right Side

7. Solve. Round your answers to the nearest hundredth.

a) $\frac{2.02}{n} = 0.71$

b) $-7.8 = \frac{4.3}{x}$

_____ $\times \frac{2.02}{n} =$ _____ $\times 0.71$

_____ $= 0.71n$

	=	$0.71n$
	=	

_____ $= n$

Name: _____ Date: _____

Apply

8. The average speed of a vehicle, s , is represented by the formula $s = \frac{d}{t}$.

d = distance, t = time

- a) Pablo drove an average speed of 85 km/h for 3.75 h. What distance did he drive?
Round your answer to the nearest hundredth.

$$s = \frac{d}{t}$$

Sentence: _____

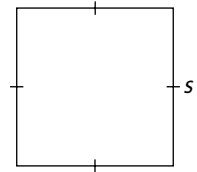
- b) Sheila drove 152 km at an average speed of 95 km/h. How much time did her trip take?

$$s = \frac{d}{t}$$

Sentence: _____

9. A square has a perimeter of 25.8 cm. Let the side length of the square be s .
Write and solve an equation to find the side length.

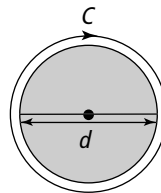
Equation: _____



Sentence: _____

10. The diameter, d , of a circle and its circumference, C , are related by the formula $\frac{C}{d} = \pi$.

Calculate the diameter of a circle with a circumference of 54.5 cm.
Round your answer to the nearest tenth.



Let $\pi = 3.14$.

Sentence: _____

11. Sailaway Travel is selling a Caribbean cruise for 20% off the regular price. Their advertisement says, "You save \$249.99." What is the sale price of the cruise?

Let r = regular price

Discount = 20% off the regular price

_____ = $0.20 \times r$

Sale price = regular price – \$249.99

Sale price = _____ – 249.99

= _____