Date: _____

8.1 Solving Equations: $ax = b, \frac{x}{a} = b, \frac{a}{x} = b$

***MathLinks 9*, pages 292–303**

Key Ideas Review

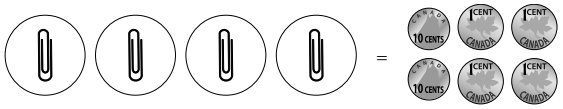
Choose from the following terms to complete #1 to 3.

algebraic	facts	materials	number lines	solution	substitution

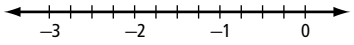
1. You can solve equations using diagrams such as _____, concrete _____ such as cups, coins, and paper clips, or an _____ method.
2. You can check solutions by using _____.
3. When checking the solution for a word problem, verify that the _____ is consistent with the _____ given in the problem.

Check Your Understanding

4. Each paper clip represents the variable x. Write an equation to represent the model. Then, solve it.



5. Model the solution to the equation $2x = -\frac{5}{2}$ on this number line.



6. Solve. Show your work.

a) $5m = \frac{7}{3}$

b) $\frac{x}{2} = \frac{4}{9}$

c) $-3\frac{3}{4} = \frac{1}{3}x$

d) $-\frac{6}{5}k = -\frac{4}{3}$

Date: _____

7. Solve and check.

a) $4.8 = \frac{w}{3.2}$ **b)** $-2.8d = 3.15$

c) $\frac{x}{7.5} = -3.1$ **d)** $-8.2m = -2.091$

8. Solve and check.

a) $\frac{8.4}{r} = 4$ **b)** $-1.2 = \frac{4.2}{x}$

9. Solve. Express each solution to the nearest hundredth.

a) $\frac{8.8}{t} = 3.4$ **b)** $-0.7 = \frac{6.41}{y}$

10. Average speed, s, is related to distance travelled, d, and time of travel, t, by the formula $s = \frac{d}{t}$. Write and solve an equation to determine:

a) how far Marko will ride if he travels at 18.5 km/h for 0.75 h

b) how much time it will take Sandra to drive 128 km at 90 km/h

11. A new desk is on sale for 35% off. The sale price of the desk is $168.87. Write and solve an equation to determine the regular price.

12. One 250-mL serving of tomato juice contains $\frac{2}{5}$ the recommended daily intake of vitamin C. How much tomato juice does a person need to consume to get the full recommended daily intake?

13. Lorena is the goalie for her hockey team. During one game, she stopped approximately 86.1% of the shots she faced. She stopped 31 shots. How many goals were scored?

14. On the school rugby team, the number of 14-year-old players is $\frac{2}{3}$ the number of 15-year-old players. If eight players are 14 years old, how many players are on the team in total? Show your thinking.