

Module 4 Exam Study Guide

1. Solving a two-step equation with signed fractions

<p>Solve for x</p> <p>a) $-\frac{2}{3} = -\frac{1}{4}x - \frac{1}{2}$</p> <p>b) $-\frac{1}{5} = -\frac{1}{2}x + \frac{5}{6}$</p>	<p>Solution:</p>
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2. Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions.

<p>Solve.</p> <p>a) $13 - (2x+2) = 2(x+2) + 3x$</p> <p>b) $3(1-3x) = 2(-4x+7)$</p>	<p>Solution:</p>
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3. Identify properties used to solve a linear equation.

Justify each step for solving the below:		Solution:
Step	Reason	
$x/2 - 9 = -5$	1. Given equation	
$x/2 - 9 + 9 = -5 + 9$	2. ?	
$x/2 = 4$	3. ?	
$(2)x/2 = 4(2)$	4. ?	
$x = 8$	5. ?	

4. Translating a sentence into a one- step equation

Translate the following into an equation. a) The sum of 18 and Tom's score is 40. b) The product of 2 and the number of baskets is 10. c) The difference between x and y is 70. d) The quotient of 10 and the number of people is 5.	Solution:
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5. Translating a phrase into a one-step expression

Translate the phrases into algebraic expressions. a) The sum of 3 and x b) The quotient of y and 4 c) The product of x and y	Solution:
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6. Translating a phrase into a two-step expression

Translate each phrase into an algebraic expression a) 12 more than twice Alan's age b) 2 less than two-thirds Steve's money	Solution:
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7. Introduction to algebraic symbol manipulation

Solve each equation for x. a) $x + 9 = y$ b) $-3 + x = y$ c) $y = x - 5$	Solution:
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8. Algebraic symbol manipulation: Problem type 1

Solve each of the following for x. a) $8x - 16y = 64$ b) $-3y + 2x = 12$	Solution:
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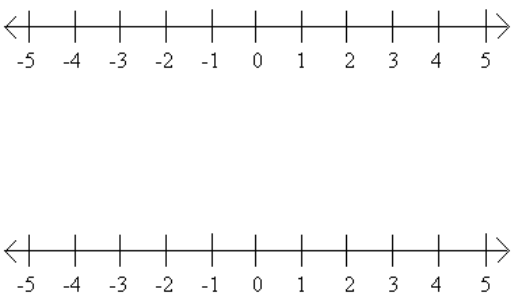
9. Solving a one-step word problem using the formula $d=rt$

a) Ginny is riding her bike. She rides 60.5 kilometers in 5 hours, what is her speed? b) Harry is riding a train that goes 70 miles an hour. How far will he travel in 3.5 hours? c) Draco runs a rate of 8 miles in 2.5 hours, how fast does Draco run?	Solution:
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10. Solving a proportion of the form $x/a = b/c$

<p>Solve.</p> <p>a) $\frac{10}{20} = \frac{x}{5}$</p> <p>b) $\frac{6}{8} = \frac{4}{x}$</p>	<p>Solution:</p>
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11. Graphing a linear inequality on the number line

<p>Graph each of the following on the number line.</p> <p>a) $x < 4$</p> <p>b) $x \leq 1$</p>	<p>Solution:</p> 
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12. Solving a two-step linear inequality: Problem type 2

<p>Solve</p> <p>a) $-29 < -3x - 17$</p> <p>b) $-4x + 3 \geq 23$</p>	<p>Solution:</p>
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13. Solving a decimal word problem using a two-step linear inequality.

<p>a) For cell service, Rey pays a monthly fee of \$12 per month and addition \$0.05 per minute of use. The least she has been charged in a month is \$77.55. What are the possible numbers of minutes she has used her phone in a month?</p> <p>b) For a gym membership, Skyler pays a \$10 monthly membership fee and \$1.50 for each time she attends a cardio class. She cannot spend more than \$22.50 in a month on gym expenses because of her budget. What is the maximum number of cardio classes she can take in a given month?</p>	<p>Solution:</p>
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