

Fifth Grade Assessment III

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Summary	This assessment will focus on writing equations to solve verbal problems and on solving equations using the syntactic rules of algebra.
Goals	1. To assess children's development representing problems algebraically and using the syntactic rules of algebra for solving equations.
Materials	Assessment Questions
Keywords	Assessment Balancing Equations Compare/Contrast Functions Contextualized Situations Function Representations Interpretation of Equations Interpretation of Graphs Interpretation of Stories Interpretation of Tables Linear Functions Production of Algebraic Expressions Production of Graphs Production of Tables Representing Variables Solving Equations



Handout: Assessment

(Page 1)

Name: _____ Date: _____

Jason has \$6 in his pocket. The rest of **Jason's** money is in **Jason's** piggy bank.
Kimberley has 3 times the amount of money that is in **Jason's** piggy bank.

1. Carefully read the story above about Jason and Kimberley. Then fill in the missing values in the tables below:

Money in Jason's piggy bank (dollars) <i>P</i>	Jason's total money (dollars)		Money in Jason's piggy bank (dollars) <i>P</i>	Kimberley's total money (dollars)
0	6		0	0
1	7		1	3
2	8		2	6
3	9		3	9
10			10	
11			11	
12			12	
<i>P</i>			<i>P</i>	

2. Who has more money? (Circle your answer)

- (a) Jason
- (b) Kimberley
- (c) It depends...

3. Explain your answer _____

Handout: Assessment

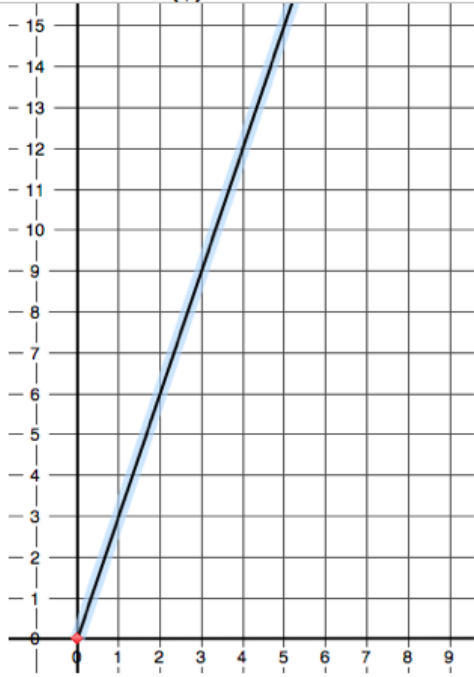
(Page 2)

Name: _____ Date: _____

Jason has \$6 in his pocket. The rest of Jason's money is in Jason's piggy bank.

Kimberley has 3 times the amount of money that is in Jason's piggy bank.

Total Amount (\$)



Amount in Jason's Piggy Bank (\$)

1. Whose amounts are shown in the graph on the left? (Circle your answer)

(a) Jason's

(b) Kimberley's

2. Explain: _____

3. Draw the line for the other child's amounts.

4. Make a circle around the part of the graph that shows Jason having more money than Kimberley.

5. How much money has to be in the piggy bank for Jason to have more money than Kimberley?

6. Make a square around the part of the graph that shows Kimberley having more money than Jason.

7. How much money has to be in the piggy bank for Kimberley to have more money than Jason?

8. Draw an arrow to show on the graph where Jason and Kimberley have the same total amount of money.

Name: _____ Date: _____

The following equation is from the problem about Jason and Kimberley. Solve for n .

$n + 6 = 3x n$

_____ = _____

_____ = _____

_____ = _____

_____ = _____

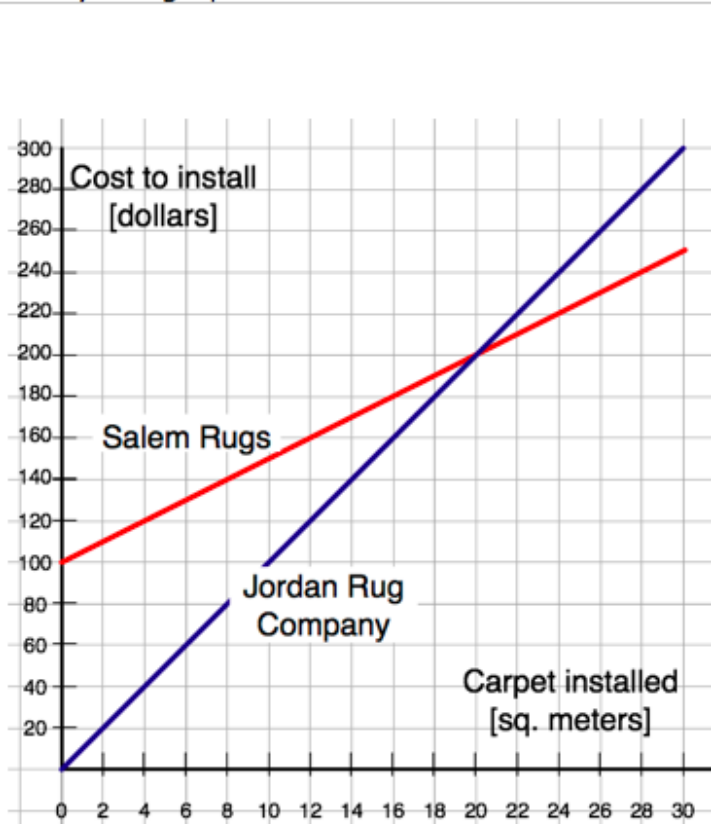
Did you find a solution, a value for n that works? What is this value?

What does this value of n mean in the story about Jason and Kimberley?

Which of the equations you have written above are true when n has that value?

Name: _____ Date: _____

The graphs below show how much two companies (Salem Rugs & Jordan Rug Company) charge for carpet (including installation). Study the graphs.



1. How much will it cost for Jordan Rug Company to install 6 square meters of carpet?

2. How much will it cost for Salem Rugs to install 6 square meters of carpet? _____

3. How much will it cost for Jordan Rug Company to install 12 square meters of carpet?

4. How much will it cost for Salem Rugs to install 12 square meters of carpet? _____

5. If you pay \$240 to Salem Rugs, how many square meters of rug will they install for you?

6. If you pay \$240 to Jordan Rug Company, how many square meters of rug will they install for you? _____

7. When is it cheaper to call Jordan Rug Company to install carpet? □

8. When is it cheaper to call Salem Rug company to install carpet?

Name: _____ Date: _____

9. Is there any case when Salem Rugs charges exactly the same amount as Jordan Rug Company? Explain.

10. How much does Jordan Rug Company charge to install n square meters of carpet? (n stands for the number of square meters)

11. How much does Salem Rugs charge to install n square meters of carpet? (n is the number of square meters)

12. Maria hired Jordan Rug Company to install 6 square meters of carpet. Tom also hired Jordan Rug Company but he asked them to install 10 square meters of carpet. How much more money did Tom pay than Maria? Explain in detail how did you find out

13. Show in the graph the difference between Maria's and Tom's cost to install their carpets.

14. Show in the graph the difference between Maria's and Tom's number of square meters installed.