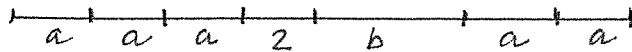


Chapter 4 Study Session for Test

1. A 36 x 42 inch rectangle is reduced so that the longer side measures 35"
  - a. What is the scale factor?
  - b. What is the length of the new rectangle's shorter side?
  
2. Adam made a chocolate cake for Valentine's Day. He used  $\frac{1}{4}$  cup of flour and 3 cups of sugar. If he decided to make a larger cake and used  $4\frac{1}{2}$  cups of sugar, how much flour would he need to use?
  
3. Every day Brianna stops at Starbucks on her way to work. She always orders coffee and oatmeal and the total cost is  $\$x$ . She always gives the barista  $\$10$ . When she gets to work she puts her change in a jar so that she can save it for a new bike. How much will she have saved after going to Starbucks for 15 days? Write an algebraic expression (including an  $x$ ) for her change.
  
4. Write an algebraic expression for the diagram below:



- a. Algebraic Expression:
  
- c. Find the length of the line segment if  $a = 4$  and  $b = 5$ .

5. Shadow time. Building A has a shadow that is 96' long. Building B is nearby. Building B is 45' tall and has a shadow that is 72' long. Draw a picture of the problem and solve for the height of Building A.

6. James collects baseball cards from three different teams: the A's, the Giants, and the Cubs. His ratio of A's cards to Giants' cards is 3 : 7. His ratio of Giants cards to Cubs' cards is 4 : 5. If he has 70 Cubs cards, how many A's cards does he have?

7. Rewrite and evaluate the following expressions for  $a = -8$ ,  $b = -2$ ,  $c = 4$ .

a.  $a + b + c =$

b.  $4(b + 3c) =$

c.  $\frac{3c^2}{b - a} =$

d.  $a - 2c^2 =$

e.  $|a + b| =$

f.  $|c - b| =$

g.  $|c| - |b| =$

h.  $c|b| =$

9. Show your work to simplify the following expressions.

a.  $\frac{.444}{.8} =$

b.  $\frac{1004}{.003} =$

~~c.  $(.26)(.0044) =$~~

~~d.  $(66.2)(.013) =$~~