**This test is fairly straightforward; just a couple of things to point out. First, the second problem about the mystery spinner is checking that students are thinking things through and being careful. Some students will quickly say the blue portion is 5/6, which is incorrect. Watch for this response when circulating. You might decide to ask students saying 5/6 "Could you sketch what you think the spinner looks like?" That might prompt them to remember only half is blue and green. In problem 4, there is more than one question here. If you feel your students are not ready to read a problem set up this way, break the questions down to parts (a) and (b). However, you can leave it as is, and just monitor by circulating. A simple "Did you answer all the questions?" will cause a student to reread his response. Also, *y* can be found with no work. That is okay! See which students realize this and which jump right in to set up the proportion and solve. Part of a deeper understanding is recognizing and knowing when to be intelligently lazy.**

Core Connections, Course 2 Name: _____

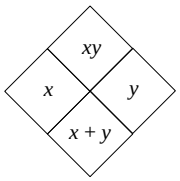
Ch 6 Assessment Date: _____ Per:_____

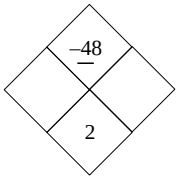
1. Solve the problem below with the 5-D Process or by writing and solving an equation. In either case, makes sure you define your variable.

   The perimeter of a triangle is 44 inches. The length of one side is twice the length of the shortest side, and the length of the other side is eight inches longer than the length of the shortest side. What are the lengths of all three sides?

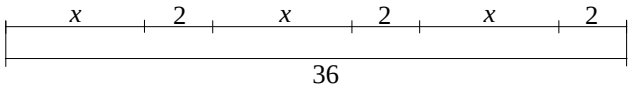
2. A mystery spinner is 50% red and white, while the rest is blue and green. If $\frac{1}{6}$ of the spinner is green, how much is blue? Show your work or explain completely. Be clear!

3. Complete the Diamond Problem below. The pattern is shown at right.

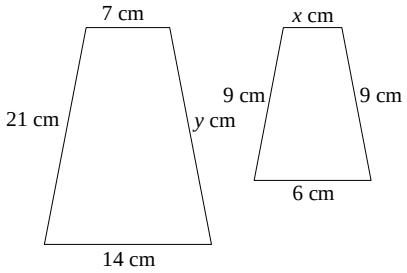


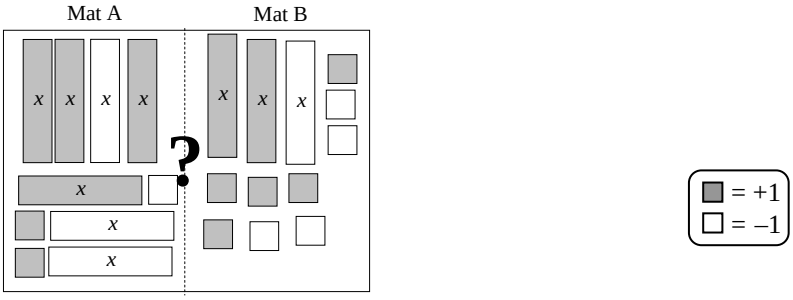

4. The diagram below represents a sequence for an acrobat on a tightrope. The variable represents the unknown length of a trick. Write and solve an equation to figure out how far the acrobat travels during each trick. Show how you know your answer is correct.



5. The two figures at right are similar. What is the scale factor? How do you know? Explain. Solve for $x$ and $y$. Show your work.




6. Use legal moves that you have developed to simplify the mat and, if possible, decide which expression is greater. Explain your answer.




7. Represent the solution for the variable described below as an inequality on a number line graph and with symbols.

> In order to enroll in the Kids on Campus program at the local community college, the student must be at least eight years old, but younger than 18 years old.

8. Rolf solved a similar problem (but not the same) to problem 7 above. His equation was

$$5(x - 4) + 2x = 14$$

and when he solved he got $x = 5$, but he isn't sure he solved correctly. Show Rolf how he can **check his equation using his solution**. Let him know if he solved the equation correctly or not, explaining how you know.

9. Write an expression to represent Royce's weight if she is three pounds more than twice Ted's weight. If Ted weighs 30 pounds, how much does Royce weigh?

**1. (7.EE.3) If $x$ is the shortest side: $x + 2x + x + 8 = 44$, $x = 9$ (the shortest side), the other two sides are 17 and 16.**
**2. (7.SP.6, 7.SP.7) 1/3**
**3. (7.NS.1, 7.NS.2) 8, -6**
**4. (7.EE.3, 7.EE.4) $3x + 6 = 36$, $x = 10$**
**5. (7.G.1) 7:3, $x$ = 3 cm, $y$ = 21 cm.**
**6. (7.EE.4) Both sides simplify to $x + 1$ so the two sides are equal.**
**7. (7.EE.4) $8 \leq x < 18$**


**8. (7.EE.4) We want students to substitute Rolf's value into the equation and check, NOT resolve the problem! If you see students solving as you circulate, you might ask them "How will we know if YOU did it correctly?" Once they try substituting the value in, they will get a false statement ( 15 = 14) so the solution must not be correct.**
**9. (7.EE.3, 7.EE.4) $3 + 2t$ if $t$ represents Ted's weight. And if $t = 30$, then Royce weighs 63.**