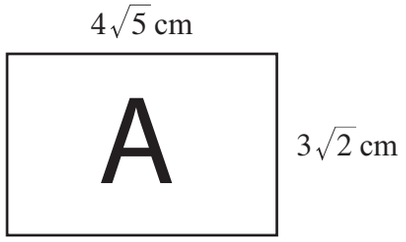
Unit 1: Radicals

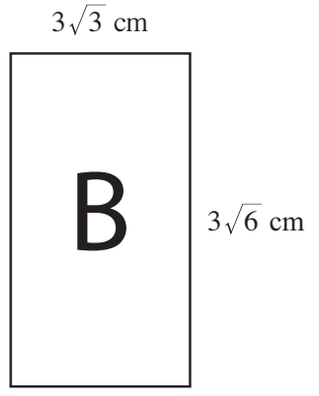
Final Review Assignment

(3) 1. Expand and simplify. Show all steps to earn full marks.

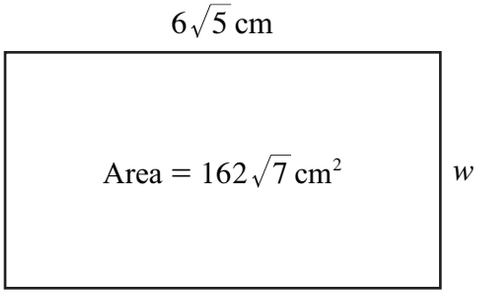
$(2 + \sqrt{8})(4 - \sqrt{6})$

(3) 2. Which of the following rectangles has the greatest area? Compare by first determining the area of each rectangle ($A = l \times w$). Express answers in simplest exact value form.





(3) 3. Determine the width, w, of the rectangle shown below.



4. State the restrictions on the variable and simplify.

(2) a. $-4\sqrt{2x}\,(7\sqrt{x^2})$

(3) b. $(3\sqrt{x}+5)(3\sqrt{x}-5)$

(3) c. $\dfrac{8\sqrt{5} - 2\sqrt{12x^3}}{2\sqrt{x}}$

(9) 5. State the restrictions on the variable and solve the equation. Be sure to verify the solution.

a. $\sqrt{2x - 4} + 5 = 7$

b. $\sqrt[3]{2x^2} = 2$

c. $\sqrt{2y + 7} + 4 = 1$

(2) 6. The surface area of a sphere can be determined using the formula $SA = 4\pi r^2$. Determine the formula for the radius of a sphere.

(5) 7. Police can use the length of skid marks on pavement to determine the speed of a vehicle before the brakes were applied in an attempt to stop. A formula has been determined that shows the relationship between the speed, s, of the car, in kilometres per hour, the coefficient of friction, f, of the road, and the length, d, of the skid marks, in metres.

$s = \sqrt{252df}$

a. At the scene of an accident, a dry stretch of pavement has a coefficient of friction of 0.75. The skid mark made by the vehicle was 29 m. How fast was the car travelling?

b. Determine the length of the skid mark on the pavement if the coefficient of friction of the road is 0.72 and the car was travelling at 60 km/h. Round to the nearest hundredth.

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Unit 1: Radicals

Use the *Check Point* to check and reflect before completing the *Big Game!* quiz for *Unit 1: Radicals*.

I understand how to:

Unit 1 Concepts	Place a checkmark in the appropriate column		
	Yes	**No**	**Maybe**
Estimate, compare, and order radicals.			
Express an entire radical as a mixed radical.			
Express a mixed radical as an entire radical.			
Perform operations on radicals – add, subtract, multiply, and divide.			
Rationalize the denominator of a radical expression.			
Determine variable restrictions for radical expressions and equations.			
Determine the roots of a radical equation (the solution).			
Verify the roots (solution) of a radical equation.			
Determine the extraneous roots by verification.			

If you have any concerns from the *Check Point*, please refer to *Strengthening and Conditioning* in the *Module* for designated practice questions and their solutions, to help you improve your skills.

Contact your teacher for assistance and clarification as needed.

You have completed the *Lessons* and *Workbooks* for *Unit 1: Radicals*. Please review all work in *Workbook 1B* to ensure it is your best work. Submit *Workbook 1B* for marking at this time and continue your training with the next unit, *Unit 2: Quadratic Functions*.

Complete the *Big Game!* quiz when you have reviewed the feedback provided by your marker for *Workbooks 1A and 1B*.

End Of Workbook 1B