

Quiz Debrief

Grade 11 Essential

Week 5

21-12-08

MrF



GRADE 11 ESSENTIAL QUIZ WEEK 5

Name: _____
Date: _____

Instructions: These are the general instructions you will have for all quizzes, tests, and the final exam.

- You are always allowed a single page double-sided 8.5" X 11" 'cheat sheet' for all quizzes, tests, & the final exam
- **Round** decimal answers to nearest 0.01 or as indicated
- Show **Units** ↳ "standard"
- **Show work** for best mark. No marks for just an answer!
 - It ensures you are following correct steps
 - It enables teacher to give part marks knowing you understand the idea
 - It enables you to go back and readily check calculations
- Each individual question is worth two marks

1. Determine the **Surface Area** and the **Volume** of the triangular prism.

- a. SA: _____
 b. VOL: _____

SA

Front $29\text{ cm} \cdot 23\text{ cm} = 667\text{ cm}^2$

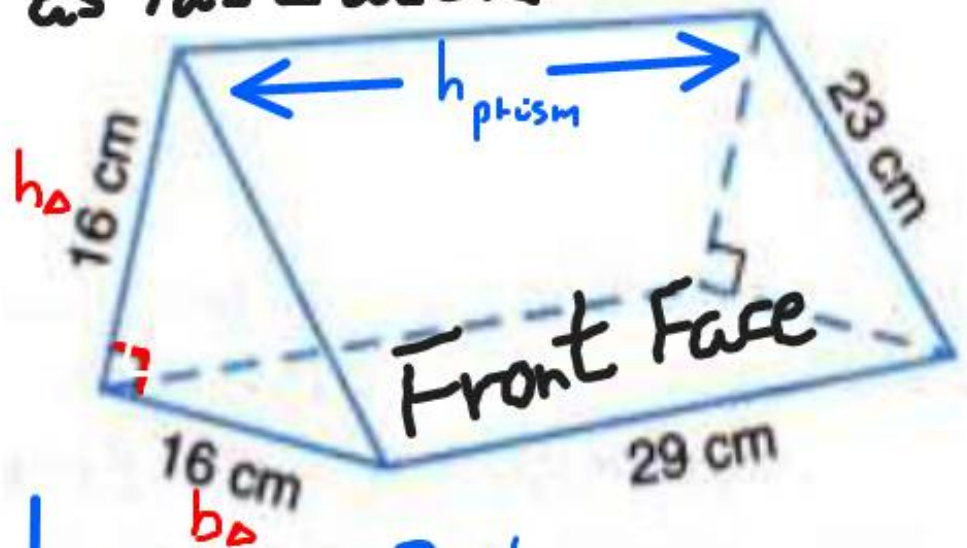
Back $29\text{ cm} \cdot 16\text{ cm} = 464\text{ cm}^2$

Bottom $29\text{ cm} \cdot 16\text{ cm} = 464\text{ cm}^2$

2 Δ 's $2 \cdot \left(\frac{1}{2} b_{\Delta} \cdot h_{\Delta}\right)$
 $= 2 \cdot \frac{1}{2} \cdot 16 \cdot 16 = 256\text{ cm}^2$

Total Surface Area: $1,851\text{ cm}^2$

Exact same question as last week



Volume = $B \cdot h_{prism}$

Base shape is a triangle. Its area is $\frac{1}{2} \cdot b_{\Delta} \cdot h_{\Delta}$

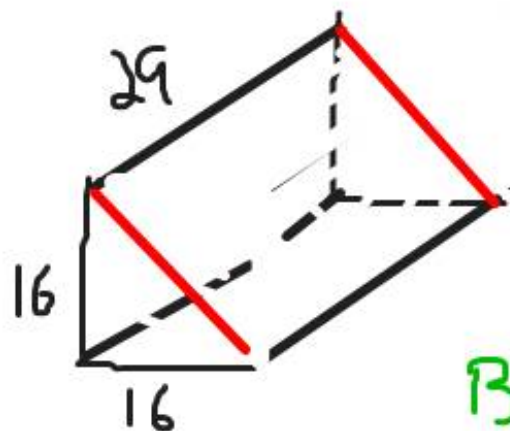
Vol = $\left(\frac{1}{2} \cdot b_{\Delta} \cdot h_{\Delta}\right) \cdot h_{prism}$
 $= \frac{1}{2} \cdot 16\text{ cm} \cdot 16\text{ cm} \cdot 29\text{ cm}$

$= 3,712\text{ cm}^3$ Sounds about right

1. Determine the **Surface Area** and the **Volume** of the triangular prism.

b. VOL : _____

A couple students invented there own way to find the volume!
Brilliant

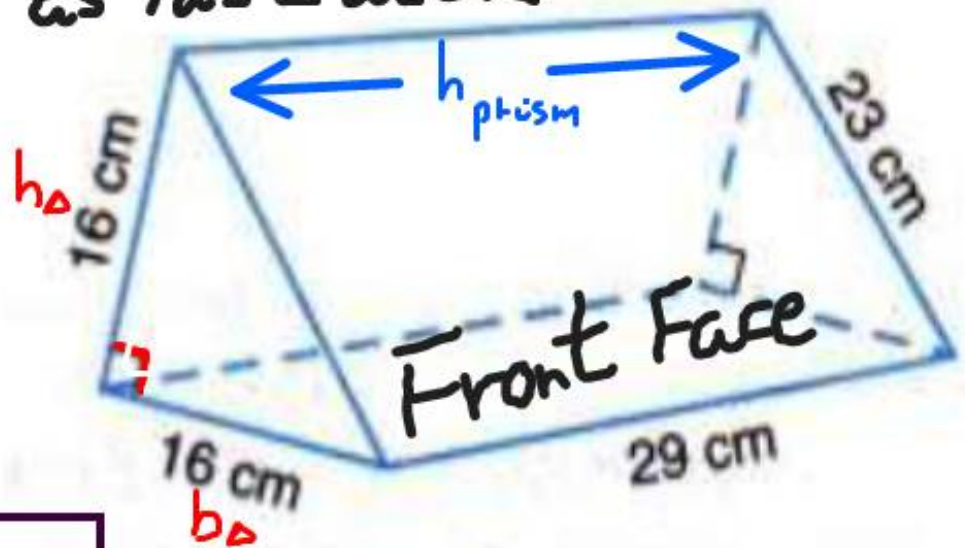


$16 \cdot 16 \cdot 29$
 $= 7,424$
 if a rectangular prism

$$7424 / 2 = 3,712$$

Brilliant!

Exact same question as last week



$$\text{Volume} = B \cdot h_{\text{prism}}$$

Base shape is a triangle. It's area is $\frac{1}{2} \cdot b_{\Delta} \cdot h_{\Delta}$

$$\begin{aligned} \text{Vol} &= \left(\frac{1}{2} \cdot b_{\Delta} \cdot h_{\Delta}\right) \cdot h_{\text{prism}} \\ &= \frac{1}{2} \cdot 16\text{cm} \cdot 16\text{cm} \cdot 29\text{cm} \\ &= \underline{3,712 \text{ cm}^3} \end{aligned}$$

Sounds about right

Solve for x:

a. $\frac{5}{8} = \frac{x}{20}$

Cross-multiply
(lazy algebra)

$$\frac{5}{8} = \frac{x}{20}$$

$$\frac{5 \cdot 20}{8} = x$$

$$\frac{100}{8} = x$$

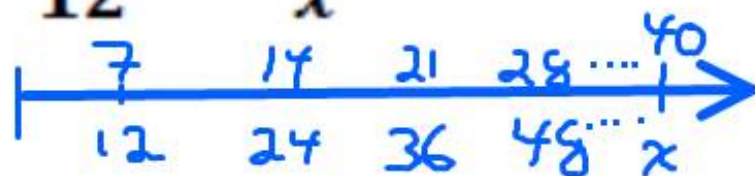
$$x = 12.5$$

Check? ✓

$$\frac{5}{8} = 0.625$$

$$\frac{12.5}{20} = 0.625$$

b. $\frac{7}{12} = \frac{40}{x}$



Do you have a mental image?
Ever try to do a graphic?

$$\frac{7}{12} = \frac{40}{x}$$

$$7 \cdot x = 12 \cdot 40$$

$$7x = 480$$

$$x = 480/7 = 68.57$$

Check? Yes!!

c. If 6 bannock cost \$9.48, determine how much 10 bannock will cost.

↳ "\$x"

$$\frac{\$9.48}{6 \text{ bannock}} = \frac{\$x}{10 \text{ bannock}}$$

$$x = \frac{9.48 \cdot 10}{6} = \$15.80$$

Check ✓ $\frac{9.48}{6} = \$1.58$ / $\$1.58$ for 1

$\frac{15.80}{10} = \$1.58$ / ✓

3. Determine length x :

Pythagorean Theorem

$$c^2 = x^2 + b^2$$

$$8.6^2 = x^2 + 7^2$$

$$73.96 = x^2 + 49$$

$$-49$$

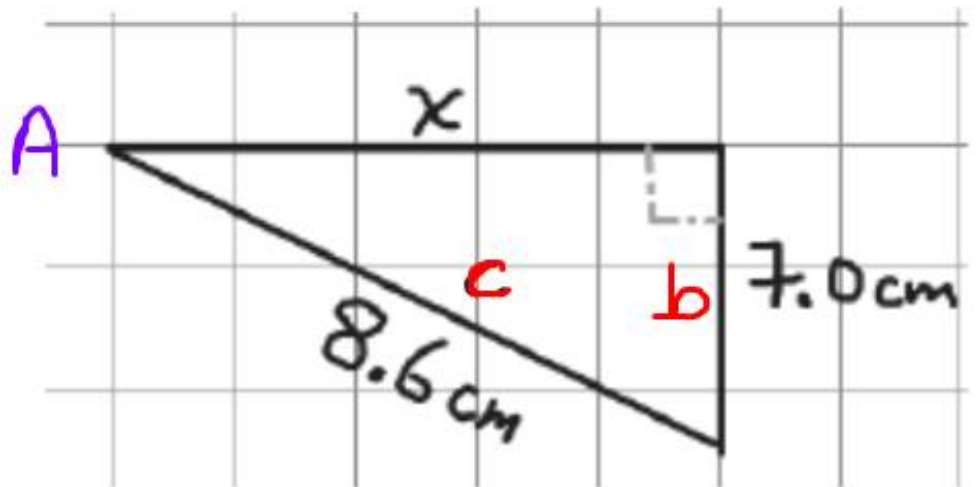
$$24.96 = x^2$$

$$\therefore x = \sqrt{x^2} = \sqrt{24.96}$$

$$x = 4.99599\dots$$

$$x = 5.00$$

rounded to
nearest 'penny'
0.01



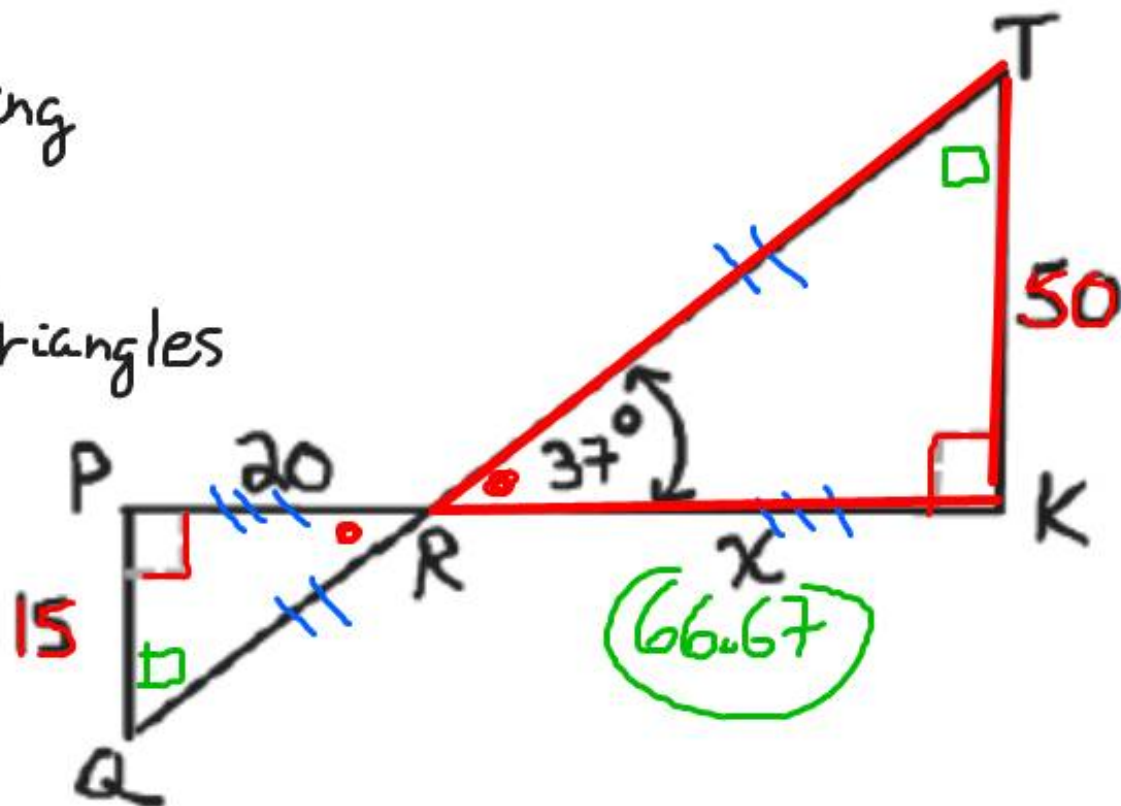
4. Determine length x and the measure of angle T ($m\angle T$)

(caution: figure not drawn to exact proportion; protractors, rulers, eyeballs may not give reliable answer. Use the laws!)

Finding corresponding
matching parts
They are similar triangles

$$\text{mom} \quad \frac{50}{15} = \frac{x}{20} \quad \leftarrow \text{mom}$$

$$\frac{50 \cdot 20}{15} = x$$
$$x = 66.67$$



a. Length x : 66.67 units

b. Angle T : 53°

$$180 - (90 + 37)$$
$$= 53^\circ$$

← Triangle sum theorem. Interior angles sum to 180°

BONUS QUESTION (2 marks if you need them)

Problem Solve. Teacher sends a student to the store with \$44 to buy 20 Donuts. The donuts must either be Chocolate or Maple. Chocolate donuts cost \$2.00 each, maple donuts cost \$3.00 each. If the student must spend all \$44, determine how many of each donut are bought.

Show work of course

# of Choc	# of Maple	# of Donuts	
10	10	20	
15 ?	+ 5	= 20	✓
16	+ 4	= 20	✓

(16 Choc) + (4 maple) = 20 ✓

Cost \$	
$10 \cdot 2 + 10 \cdot 3$	BZZT! WRONG!
\$50	
$15 \cdot 2 + 5 \cdot 3$	close!!
=\$45	
$16 \cdot 2 + 4 \cdot 3$	Yes!
=\$44	

The student buys 16 chocolate and 4 maple

$$10 \cdot 2 + 10 \cdot 3 = 50$$

$$15 \cdot 2 + 5 \cdot 3 = 45$$

$$16 \cdot 2 + 4 \cdot 3 = 44$$

A multi-line display calculator helps too

Algebra

$x = \# \text{ choc}$

$$\$2 \cdot x + \$3 \cdot (20 - x) = \$44$$

$$2x + 60 - 3x = 44$$

$$\begin{array}{r} -1x = -16 \\ \hline -1 \quad \hline -1 \end{array}$$


$$x = 16$$


$$\text{soy} = 4$$

Pre-calculus
if you care

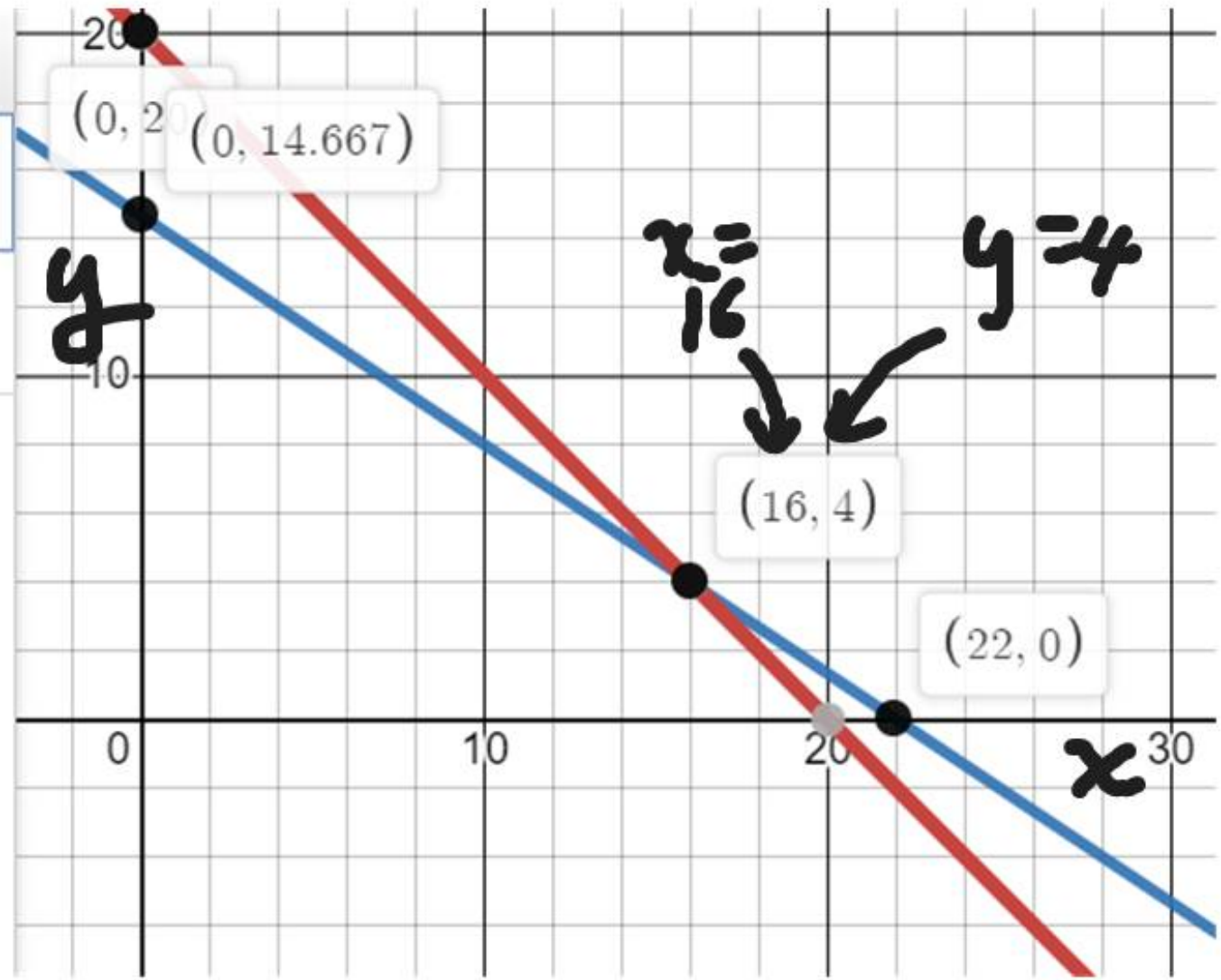
+

↶ ↷ ⚙ ⏪

 $x + y = 20$ ×

 $2x + 3y = 44$ ×

How we
will do
it in
Applied
math!





Which?



LOAD CLEAR



Determined to deliver baby!