Grade 12 Essential

Week 1 Quiz

DEBRIEF

Formative Assessment (Inventory)

Gr12 Essential Quiz Week 1

Grade 12 Essentials Mathematics Formative Assessment. An inventory of prior math skills

This a Formative Assessment to sample areas of study that need to be targeted to help students identify their strengths and weaknesses and target areas that need work.

You will still need paper and pencil and calculator to determine the answer to these questions.

You may use any of the coloured Study Notes (all grades) you have been provided.
Answer all questions. State IDK if uncertain of the answer.

Also delivered on-line !!

Email *

Valid email address

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Solve for x

$$\frac{4}{9} = \frac{x}{31.5}$$

Cross multiply

$$\frac{4}{9} = \frac{x}{31.5}$$

$$\frac{4 \cdot 31.5}{9} = x$$

$$x = 14$$

or Algebra:

$$31.5 \cdot \frac{4}{9} = \frac{x}{31.5} \cdot 31.5$$

$$14 = x$$

Convert

10 lbs = ___ kg

$$\frac{1\text{ kg}}{2.205\text{ lb}} = \frac{x\text{ kg}}{10\text{ lb}}$$

$$\frac{1\text{ kg} \cdot 10\text{ lb}}{2.205\text{ lb}} = x$$

$$4.5351\ldots = x$$

$$4.54\text{ kg} = x$$

Round properly!

or

$$10\text{ lb} \cdot \frac{1\text{ kg}}{2.205\text{ lb}}$$

$$= 4.54\text{ kg}$$

Determine the area.

lol! 4 squares!

Formula → $A = \frac{1}{2} \cdot b \cdot h$

$A = \frac{1}{2} \cdot 4\,cm \cdot 2\,cm$

$A = 4\,cm^2$ (square cm)

Grade 12 Essential. Omar buys a new car with a base price of $21,800 and purchases the following options: Navigation system: $1,000 and Sound system: $800. Calculate the cost, after taxes, of purchasing the new vehicle if he receives $3,000 for his trade-in. Assume PST = 7% and GST = 5%. State IDK if unknown.

$21,800 + $1,000 + $800 = $23,600 price of car

23,600 − 3,000 = 20,600

trade

20,600 • 1.12 = $23,072 price of car with taxes

Cheat sheet

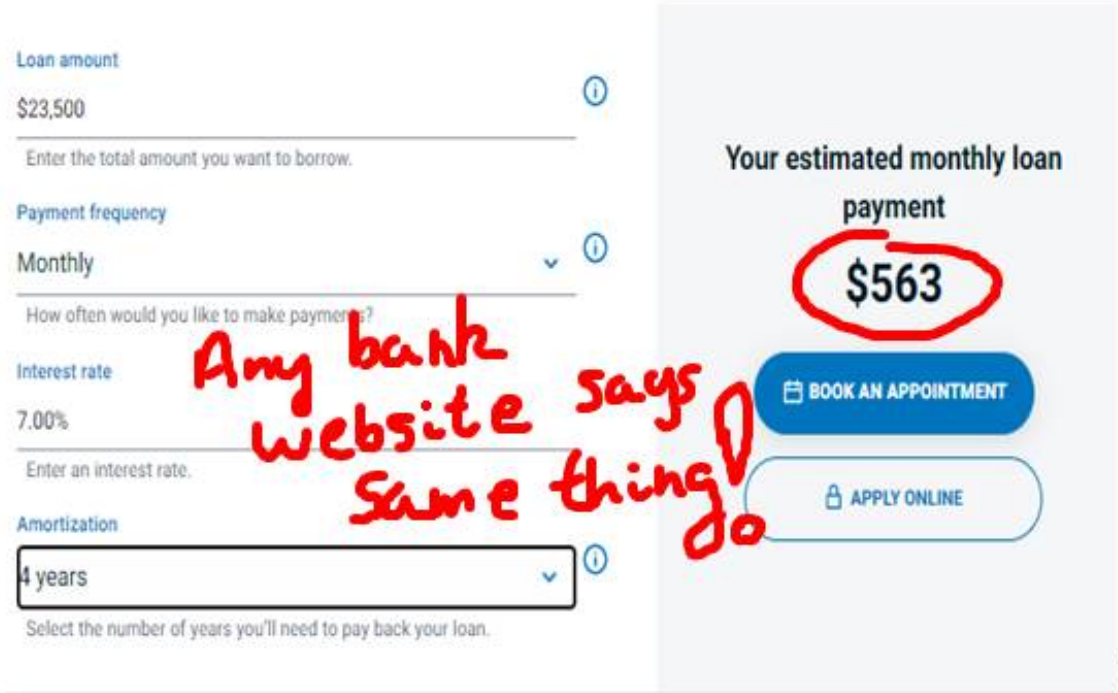
Final Vehicle Cost =
(Dealer price after eco fees, freight, options, etc **– Trade in)* tax factor**

Grade 12 Essential. Gerald takes a car loan for $23,500. He gets a 4-year loan at an annual interest rate of 7%. Determine his monthly payments. Use the loan tables provided. State IDK if unknown.

$23.95 \cdot \frac{23,500}{1,000}$

= $562.83 monthly payment

Did this in Grade 11 also!?

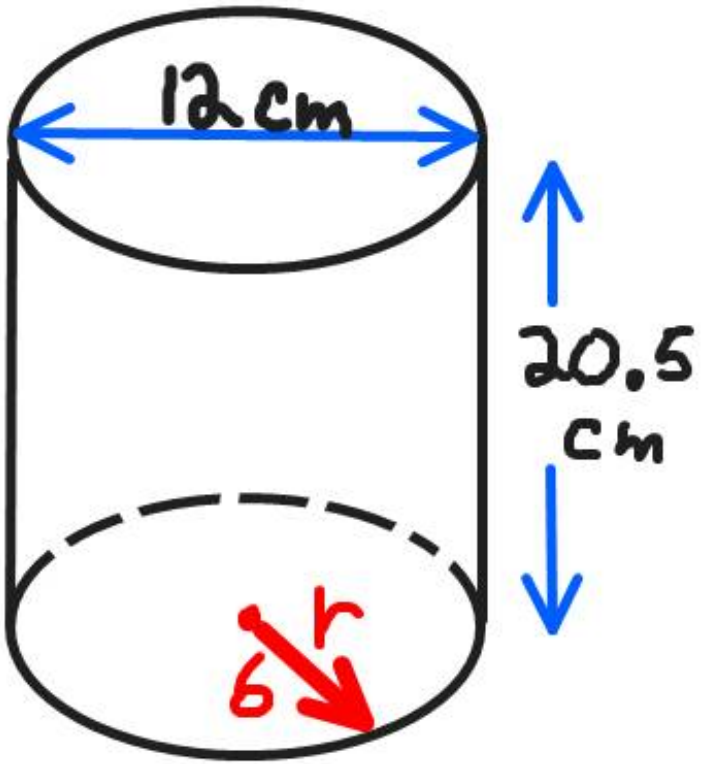


Any bank website says same thing! So

Monthly Vehicle Loan Payments per Thousand Borrowed

Interest Rate	Years to Repay Loan 1	2	3	4	5	
4.00%	$85.15	$43.42	$29.52	$22.58	$18.42	$
4.25%	$85.26	$43.54	$29.64	$22.69	$18.53	$
4.50%	$85.38	$43.65	$29.75	$22.80	$18.64	$
4.75%	$85.49	$43.76	$29.86	$22.92	$18.76	$
5.00%	$85.61	$43.87	$29.97	$23.03	$18.87	$
5.25%	$85.72	$43.98	$30.08	$23.14	$18.99	$
5.50%	$85.84	$44.10	$30.20	$23.26	$19.10	$
5.75%	$85.95	$44.21	$30.31	$23.37	$19.22	$
6.00%	$86.07	$44.32	$30.42	$23.49	$19.33	$
6.50%	$86.30	$44.55	$30.65	$23.71	$19.57	$
7.00%	$86.53	$44.77	$30.88	$23.95	$19.80	$
7.50%	$86.76	$45.00	$31.11	$24.18	$20.04	$

Determine Volume



radius

$$V = \pi \cdot r^2 \cdot h$$

$$V = \pi \cdot (6\text{cm})^2 \cdot 20.5\text{ cm}$$

$$V = 2{,}318.50\text{ cm}^3$$

ie: ~2.3 litres

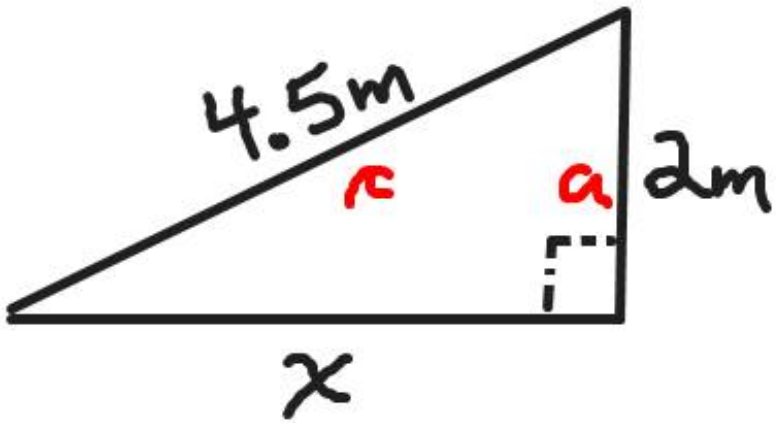
$$\pi \cdot 6^2 \cdot 20.5 = 2318.495378$$

use a decent calculator..

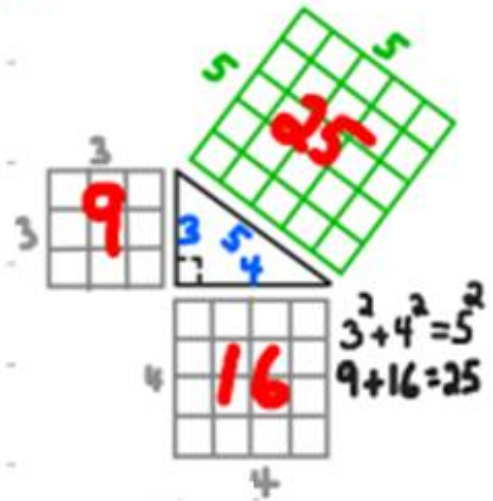
$V = \pi \cdot r^2 \cdot h$

↖ Formula.
Just a bunch of stacked up circles!

Determine length x of the Right Triangle



Pythagoras!



$$r^2 = a^2 + x^2$$

$$\downarrow$$

$$4.5^2 = 2^2 + x^2$$

$$20.25 = 4 + x^2$$

$$16.25 = x^2$$

$$x = \sqrt{16.25}$$

$$= 4.031128$$

$x = 4.03$ m TLAR

Determine the measure of Angle x

SOH CAH TOA

$$\tan(x) = \frac{\text{OPP}}{\text{ADJ}}$$

$$\tan(x) = \frac{2}{5} = 0.4$$

$$x = \tan^{-1}\left(\frac{2}{5}\right)$$

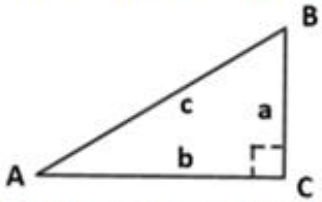
$$x = \tan^{-1}\left(\frac{2}{5}\right)$$

$$x = 21.80^{\circ}$$

Grade 10

Unit E – Trigonometry

SOH CAH TOA. $\sin A = \frac{\text{side opp to } \angle A}{\text{hypotenuse}}$; $\cos A = \frac{\text{side adjacent to } \angle A}{\text{hypotenuse}}$; $\tan A = \frac{\text{side opp to } \angle A}{\text{side adj to } \angle A}$



$\sin A = \frac{a}{c}$ $\sin B = \frac{b}{c}$

$\cos A = \frac{b}{c}$ $\cos B = \frac{a}{c}$

$\tan A = \frac{a}{b}$ $\tan B = \frac{b}{a}$

$\cos\theta = \frac{\text{Adj}}{\text{Hyp}}$

$\cos\theta = 4/7 \cong 0.5714$

$\theta = \cos^{-1}(4/7) \cong 55°$

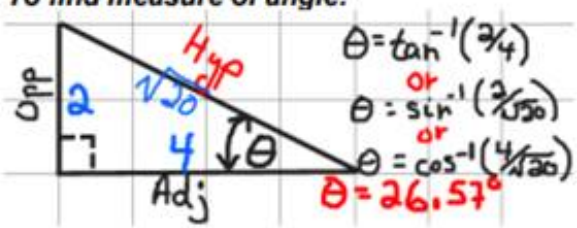
Hypotenuse side is always across from the 90° corner.

If know two parts of a right triangle, can figure out the rest.

***Handy rule**: longest side across from biggest angle, smallest side across from smallest angle.*

***Round** trig ratios to nearest 0.0001 normally*

To find measure of angle:



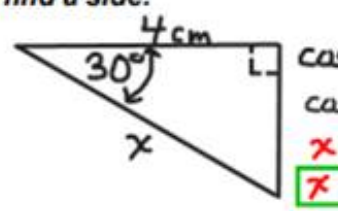
$\theta = \tan^{-1}(2/4)$

or $\theta = \sin^{-1}(2/\sqrt{20})$

or $\theta = \cos^{-1}(4/\sqrt{20})$

$\theta = 26.57°$

To find a side:



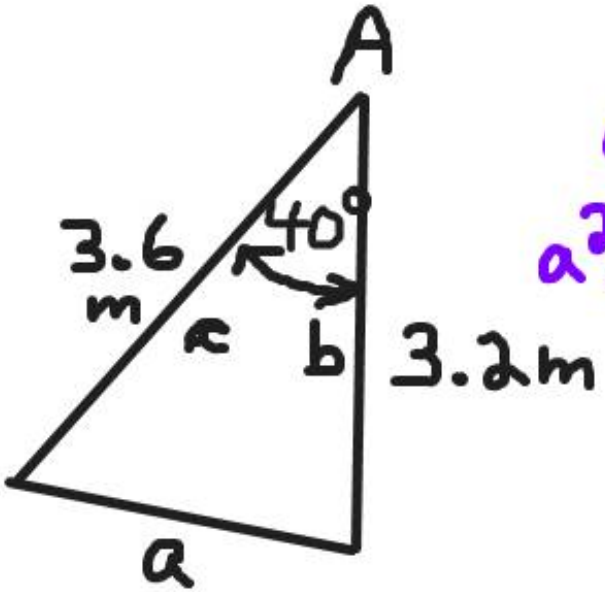
$\cos 30° = 4/x$

$\cos 30° = 4/x$

$x = 4/\cos 30°$

$x = 4.62\text{cm}$

COSINE LAW GRADE 11



$a^2 = 3.2^2 + 3.6^2 - 2 \cdot 3.2 \cdot 3.6 \cdot \cos 40^\circ$

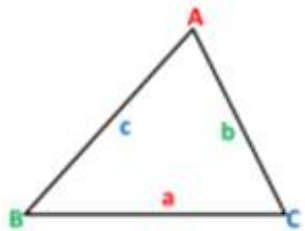
$a^2 = (3.2)^2 + (3.6)^2 - 2 \cdot (3.2) \cdot (3.6) \cdot \cos(40)$

$a^2 = 5.550336030$

$a = \sqrt{5.55033....}$

$a \approx 2.36\,m$

$a^2 = b^2 + c^2 - 2 \cdot b \cdot c \cdot \cos \angle A$

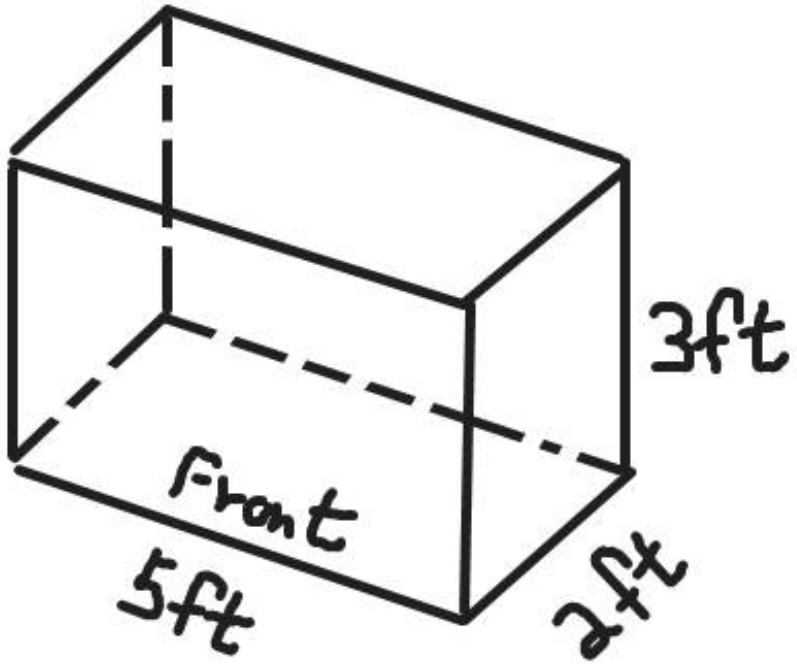


Study Notes
Gr 11 Cheat Sheet

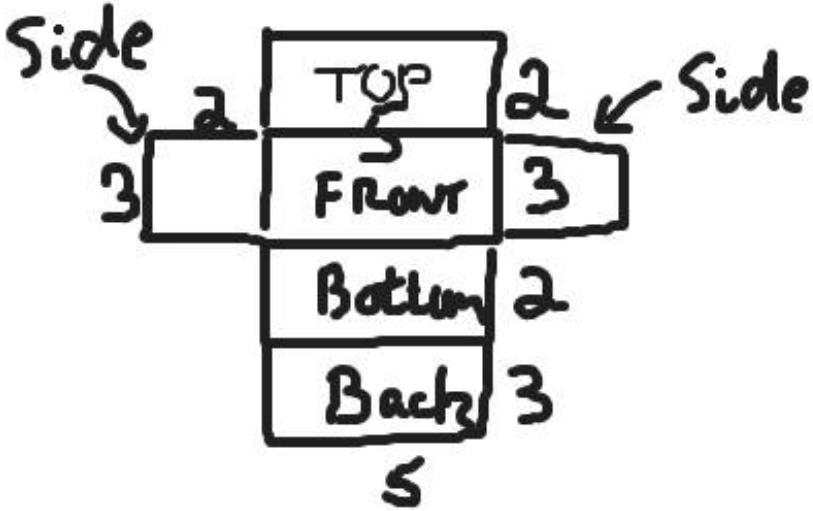
Trigonometry Cosine Law:
Cosine Law for *side a* across from angle A: $a^2 = b^2 + c^2 - 2*b*c*\cos(A)$

Surface Area Rectangular Prism

Grade 11



"NET"



AREA OF Faces:

Front & Back

$2 \cdot (5ft \cdot 3ft) = 30ft^2$

Top & Bottom

$2 \cdot (5ft \cdot 2ft) = 20ft^2$

Sides

$2 \cdot (2ft \cdot 3ft) = 12ft^2$

Total: $62ft^2$

That is it

Hope most of this was ok!!

If not then hang out the end of class for a bit