

Grade 11 Essential Week 6 Quiz Debrief

22-12-15



MrF

GRADE 11 ESSENTIAL QUIZ WEEK 6 - 22-12-15

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Complete this quiz by : **15:30 today**. After that it will be disabled.

The quiz is available in **printed version in class** too.

Open Book! Although rummaging through a binder is silly when you should have yours (or my) Study Notes (Cheat Sheet) readily at hand.

Use Loan Tables and Geometric Formulae you have been provided.

Have paper and pencil on hand to do your calculations.

Round any calculated decimal answers to the nearest 0.01 of course



This quiz, owing to weather and attendance, replaces the intended Mid-Term Test.

Email *

Valid email address

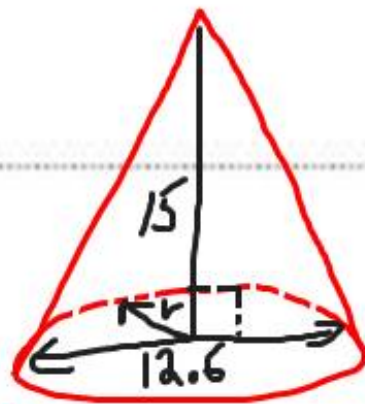
This quiz, if completed, should bump up some lower marks by ~5% and just really lock in the higher marks

Determine the **Volume** of a cone with a base diameter of 12.6 cm and a height of 15 cm. [Use an accurate value for pi] [Shoot me a pic or scan of your solution for this one]

Draw a cone!

Short-answer text

$$\begin{aligned}V_{\text{cone}} &= \frac{1}{3}(\pi r^2) \cdot h \\&= \frac{1}{3} \cdot \pi \cdot 6.3^2 \cdot 15 \\&= 623.45 \text{ cm}^3\end{aligned}$$



Joanne takes a loan \$23,000 for 5 years at 25% interest rate to buy a car. She will make monthly payments. State how much interest she ends up paying over the life of the loan.

Short-answer text

OMG! Don't do it!

$$\$29.35 / 1,000 \cdot 23,000 = \$675.05 \text{ payment per month}$$

$$\$675.05 / \text{month} \cdot 60 \text{ months} = \$40,503 \text{ Total Paid}$$

$$\text{Interest: } 40,503 - 23,000 = \text{Interest } \$17,503$$

Amt Paid - Principal

for a \$23k car
which probably
died already!!

Annual Rate	1 Year Monthly	2 Years Monthly	3 Years Monthly	4 Years Monthly	5 Years Monthly
2%	\$84.24	\$42.54	\$28.64	\$21.70	\$17.53
3%	\$84.69	\$42.98	\$29.08	\$22.13	\$17.97
4%	\$85.15	\$43.42	\$29.52	\$22.58	\$18.42
5%	\$85.61	\$43.87	\$29.97	\$23.03	\$18.87
6%	\$86.07	\$44.32	\$30.42	\$23.49	\$19.33
7%	\$86.53	\$44.77	\$30.88	\$23.95	\$19.80
8%	\$86.99	\$45.23	\$31.34	\$24.41	\$20.28
9%	\$87.45	\$45.68	\$31.80	\$24.89	\$20.76
10%	\$87.92	\$46.14	\$32.27	\$25.36	\$21.25
12%	\$88.85	\$47.07	\$33.21	\$26.33	\$22.24
14%	\$89.79	\$48.01	\$34.18	\$27.33	\$23.27
16%	\$90.73	\$48.96	\$35.16	\$28.34	\$24.32
18%	\$91.68	\$49.92	\$36.15	\$29.37	\$25.39
20%	\$92.63	\$50.90	\$37.16	\$30.43	\$26.49
25%	\$95.04	\$53.37	\$39.76	\$33.16	\$29.35
30%	\$97.49	\$55.91	\$42.45	\$36.01	\$32.35

Any bank website
would say about
the same thing!

\$29.35 per thousand

Kyle inherits \$8,500 from an uncle who recently passed. He invests it in a GIC (Guaranteed Investment Certificate) that pays 8.35% compounded weekly. He locks it in for 5 years. The value of the investment at the end of the 5 years will be: [select best or closest answer, answers here are rounded to nearest \$10]

~~\$534,800~~

\$12,900

\$12,890

~~\$3,550~~

\$12,050

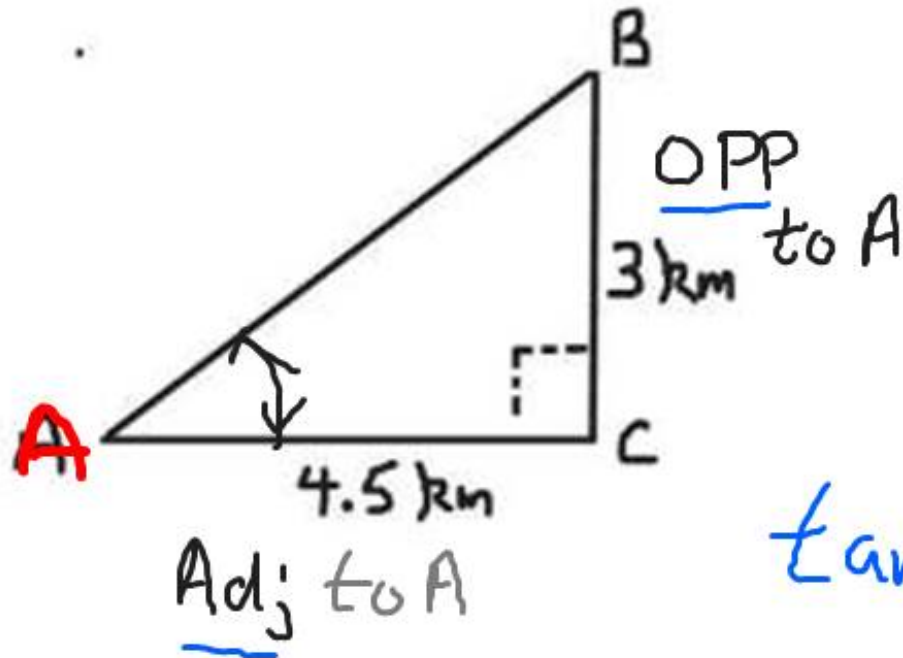
$$A = P \cdot \left(1 + \frac{r}{s}\right)^{n \cdot s}$$
$$A = 8,500 \cdot \left(1 + \frac{0.0835}{52}\right)^{(5 \cdot 52)}$$

$$A = 12,900.05$$

$$8500 \cdot \left(1 + \frac{0.0835}{52}\right)^{(5 \cdot 52)} = 12900.05168$$

Determine Angle A *

SOH CAH TOA



$$\tan \angle A = \frac{\text{OPP}}{\text{ADJ}} = \frac{3}{4.5}$$

$$\therefore \angle A = \tan^{-1}\left(\frac{3}{4.5}\right) = 33.69^\circ$$

$$\tan^{-1}\left(\frac{3}{4.5}\right)$$

$$= 33.69006753$$

APPENDIX B: TRIGONOMETRIC VALUES

Angle	Sin	Cos	Tan
0	0	1	0
1	0.0175	0.9998	0.0175
2	0.0349	0.9994	0.0349
3	0.0523	0.9986	0.0524

31	0.5150	0.8572	0.6009
32	0.5299	0.8480	0.6249
33	0.5446	0.8387	0.6494
34	0.5592	0.8290	0.6745

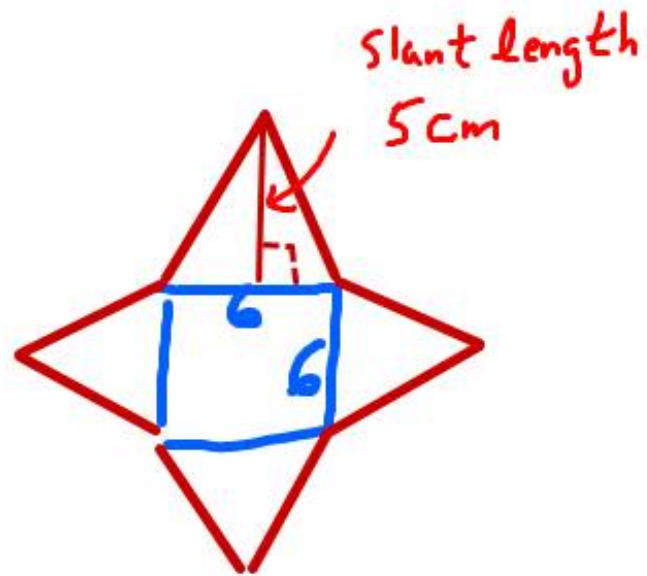
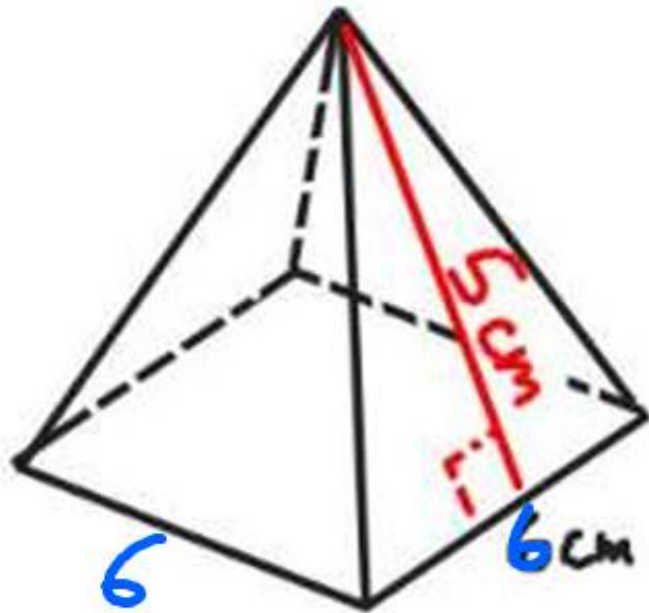
$\frac{3}{4.5} = 0.6666$
The "old" way

\Rightarrow

$\sim 33.5^\circ$
or so

$\rightarrow 0.6666$

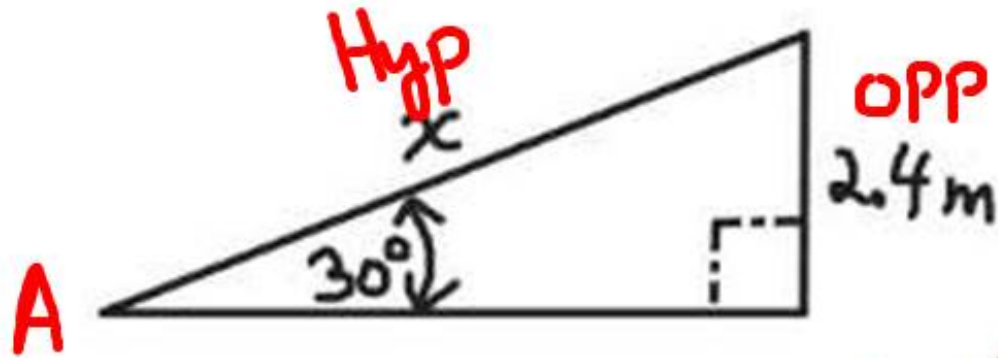
Determine the Surface Area of this Square Pyramid*



$$\begin{aligned} \text{Base} &= 6\text{cm} \cdot 6\text{cm} = 36\text{ cm}^2 \\ 4 \Delta\text{'s} &= 4 \cdot \left(\frac{1}{2} \cdot b_{\Delta} \cdot h_{\Delta}\right) \\ &= 4 \cdot \frac{1}{2} \cdot 6 \cdot 5 = 60\text{ cm}^2 \end{aligned}$$

$$\text{SA} = 96\text{ cm}^2$$

Determine Length x . [Shoot me a pic or scan of your solution for this one]



~~SOH~~ CAH
TOA

$$\sin A = \frac{\text{opp}}{\text{hyp}}$$

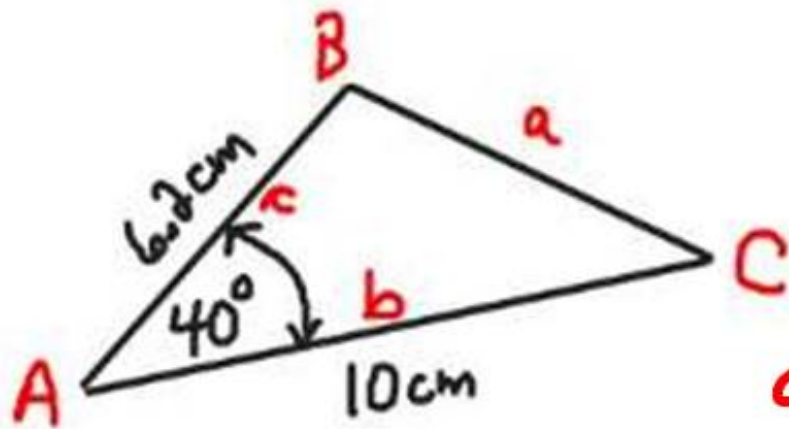
$$\sin 30^\circ = \frac{2.4}{x}$$

$$x = \frac{2.4}{\sin 30}$$

$$x = \frac{2.4}{\sin 30^\circ}$$

$$x = 4.8 \text{ m}$$

Bonus Question 1. Determine length a in this obtuse triangle [extra 2 marks if you need them]



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

$$a^2 = 10^2 + 6.2^2 - 2 \cdot 10 \cdot 6.2 \cdot \cos 40^\circ$$

$$a^2 = 43.4504\dots$$

$$a = \sqrt{43.4504\dots} = 6.59 //$$

Short-answer text

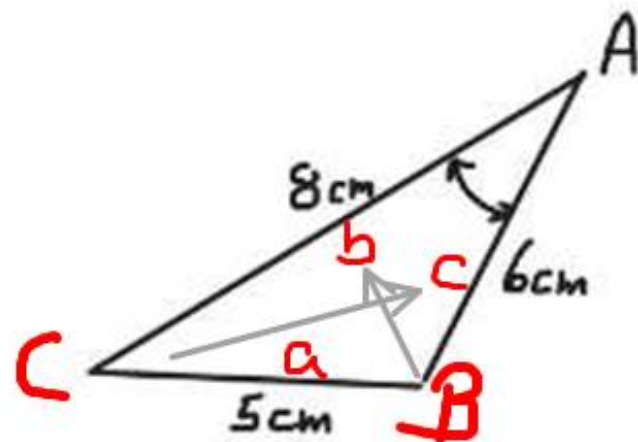
$$10^2 + 6.2^2 - 2 \cdot 10 \cdot 6.2 \cdot \cos 40$$

$$= 43.45048905$$

$$\sqrt{43.45048905}$$

$$= 6.591698495$$

Bonus Question 2. Determine Angle A in this acute triangle [extra 2 marks if you need them]



use formula

$$\angle A = \cos^{-1} \left(\frac{b^2 + c^2 - a^2}{2 \cdot b \cdot c} \right)$$

$$\angle A = \cos^{-1} \left(\frac{8^2 + 6^2 - 5^2}{2 \cdot 8 \cdot 6} \right)$$

$$\angle A = \cos^{-1} \left(\frac{75}{96} \right)$$

$$\angle A = 38.62^\circ$$

Fun!

Short-answer text

Bonus Question 3. A farmer has 42 animals; cows and turkeys. He cannot recall how many of each he has but he recalls there are a total of 150 legs. Determine how many turkeys the farmer has.

Guess & Check!

<i># of Turkeys</i>	<i># of Cows</i>	<i># of LEGS</i>
<i>x 30?</i>	<i>12</i>	<i>$30 \cdot 2 + 12 \cdot 4 = 108$ X</i>
<i>x 20?</i>	<i>22</i>	<i>$20 \cdot 2 + 22 \cdot 4 = 128$ X</i>
<i>x 10?</i>	<i>32</i>	<i>$10 \cdot 2 + 32 \cdot 4 = 148$ X</i>
<i>5?</i>	<i>37</i>	<i>$5 \cdot 2 + 37 \cdot 4 = 158$ X <i>Too low</i></i>
<i>(9)?</i>	<i>33</i>	<i>$9 \cdot 2 + 33 \cdot 4 = 150$ ✓</i>

Yes 9 Turkeys!

$30 \cdot 2 + 12 \cdot 4$	<i>A decent calculator helps</i>	$= 108$
$20 \cdot 2 + 22 \cdot 4$		$= 128$
$10 \cdot 2 + 32 \cdot 4$		$= 148$
$9 \cdot 2 + 33 \cdot 4$		$= 150$

Any concerns about the course so far?

Long-answer text

Try to learn you
big chunks of the
grade 10 most of
you by-passed
and prepare you for
a leap to Grade 12 Applied



LOAD CLEAR !

