

***Grade 11 Essential
Quiz Debrief
Week 4***

MrF



Grade 11 Essential Week 4 Quiz

Routine Thursday Quiz. Week 4. A summative quiz, worth marks (Quizzes are 15% of your mark).
Grab pencil, paper, cheat sheet, calculator, formula sheet, loan tables , etc.

This 30 minute quiz is allotted 6 hours before it is disabled.

Ashton borrows \$7,900 to have his house painted by Avery's 'Quickie Paint'. The loan is for 8% over 3 years. State Ashton's monthly loan payment. [use tables or use an App or website if you want, they all give the same answer give or take a few cents]

$$31.34 \cdot \frac{7,900}{1,000} = 247.59$$

Mode End Beginning

Present Value

Payments

Future Value

Annual Rate (%)

Periods

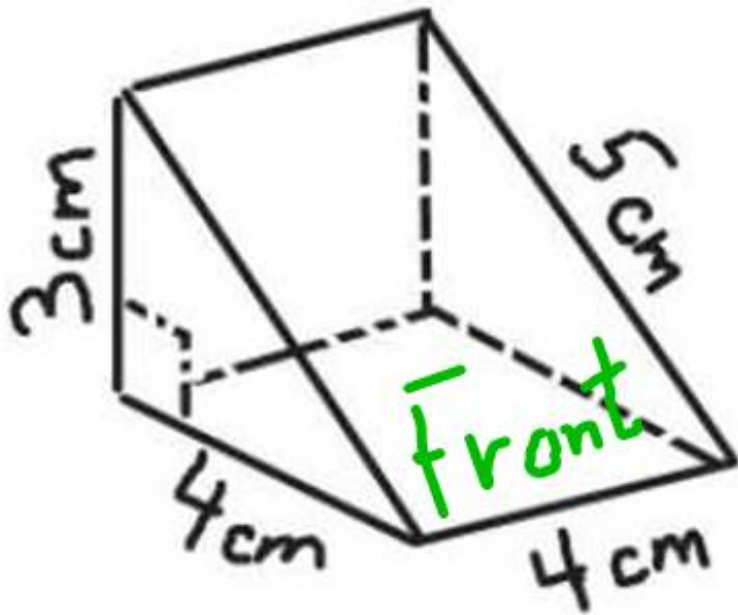
Compounding

An App

MONTHLY LOAN PAYMENT TABLE FOR A LOAN OF \$1,000

Annual Rate	1 Year Monthly	2 Years Monthly	3 Years Monthly	4 Years Monthly	5 Years Monthly	10 Years Monthly	15 Years Monthly
2%	\$84.24	\$42.54	\$28.64	\$21.70	\$17.53	\$9.20	\$6.58
3%	\$84.69	\$42.98	\$29.08	\$22.13	\$17.97	\$9.66	\$6.98
4%	\$85.15	\$43.42	\$29.52	\$22.58	\$18.42	\$10.12	\$7.39
5%	\$85.61	\$43.87	\$29.97	\$23.03	\$18.87	\$10.61	\$7.81
6%	\$86.07	\$44.32	\$30.42	\$23.49	\$19.33	\$11.10	\$8.24
7%	\$86.53	\$44.77	\$30.88	\$23.95	\$19.80	\$11.61	\$8.68
8%	\$86.99	\$45.23	\$31.34	\$24.41	\$20.28	\$12.13	\$9.13
9%	\$87.45	\$45.68	\$31.80	\$24.89	\$20.76	\$12.67	\$9.59

Determine the Surface Area of the Triangular Prism shown here



Front $4\text{cm} \cdot 5\text{cm} = 20\text{cm}^2$

Back $3\text{cm} \cdot 4\text{cm} = 12\text{cm}^2$

Bottom $4\text{cm} \cdot 4\text{cm} = 16\text{cm}^2$

2Δ 's $(\frac{1}{2} \cdot 4\text{cm} \cdot 3\text{cm}) \cdot 2 = 12\text{cm}^2$

Total
SA

60cm^2

48 square cm

240 square cm

60 square cm

16 square cm

A popcorn container at the movie theatre is the shape of a cone. The diameter of the cone is 20 cm, the height (depth) of the cone is 30 cm. The cone has a volume of: [select best or closest answer]

Version 2
I forgot the $\frac{1}{3}$
first time

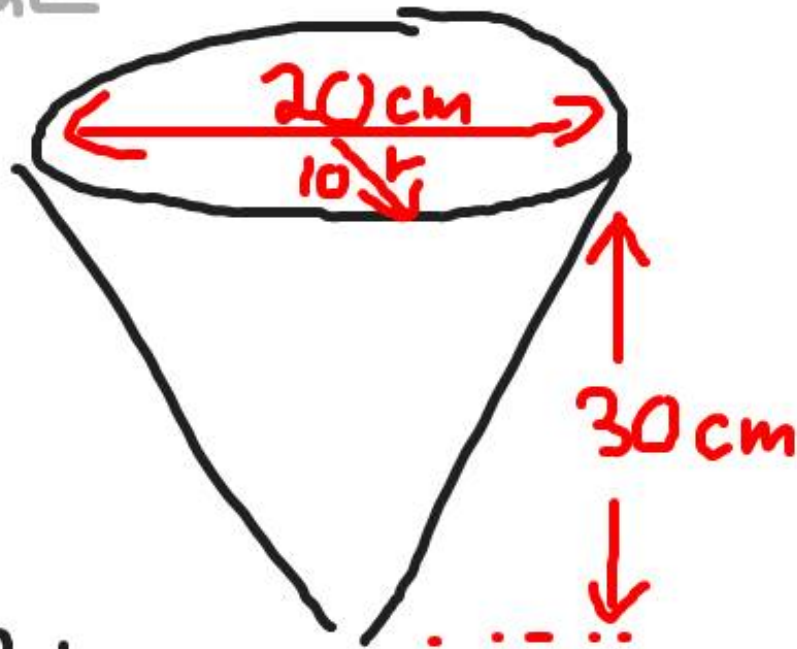
Draw it!

3,140 cubic cm

9,420 cubic cm

12,570 cubic cm

38,000 cubic cm



$$\begin{aligned} \text{Vol}_{\text{cyl}} &= \frac{1}{3} \pi \cdot r^2 \cdot h \\ &= \frac{1}{3} \cdot \pi \cdot 10^2 \cdot 30 \\ &= 3141.59 \text{ cm}^3 \end{aligned}$$

$$\frac{1}{3} \cdot \pi \cdot 10^2 \cdot 30$$

$$= 3141.592653$$

Using the Rule of 72 for an investment, state the approximate time it will take for an investment to double if it is invested with compounding interest at 6% Annual Percentage Rate (APR). State the answer below:

If $r \cdot t = 72$ then
~ doubled investment

$$72 = 6 \cdot ? \quad 72 = 6 \cdot (12)$$

12 years should ~ double

Check? Test? \rightarrow ✓
12 works!

```
1*(1+0.06/4)^(12
*4)
→ 2.043478289
1*(1+0.06/1)^(12
→ 2.012196472
```


Which has the most volume? *

just drawing this would probably solve it

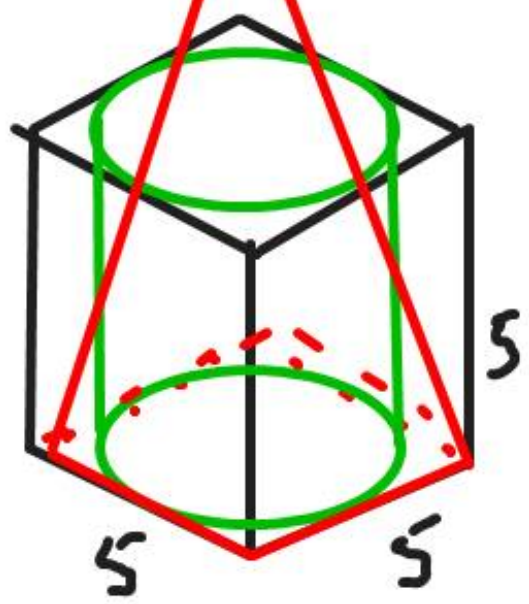
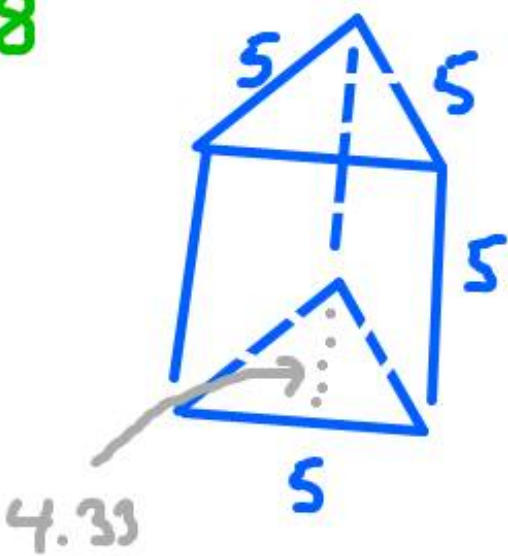
a Cube with sides of 5 cm
 $5 \cdot 5 \cdot 5 = 125 \text{ cm}^3$

a Square Pyramid with Base area of 25 cm^2 and height 10 cm ~~X~~
 $\frac{1}{3} \cdot 25 \cdot 10 \approx 83 \text{ cm}^3$

an Equilateral Triangular Prism with all edges 5 cm in length; ~~X~~
will fit inside cube $\sim 54 \text{ cm}^3$

a Cylinder with diameter 5 cm and height 5 cm ~~X~~
 $\pi \cdot 2.5^2 \cdot 5 \approx 98$

If you drew it you likely would not need any calculations



Kyra borrows \$600 dollars from a pay day loan for three months. The loan is calculated using just simple interest. Kyra pays back a total of \$660. The interest rate she was charged is:

- 40%
- 60%
- \$60
- 0.25

$$I = P \cdot r \cdot t$$

$$60 = 600 \cdot r \cdot \frac{3}{12} \text{ yr}$$

$$60 = 150 \cdot r$$

$$\frac{60}{150} = r$$

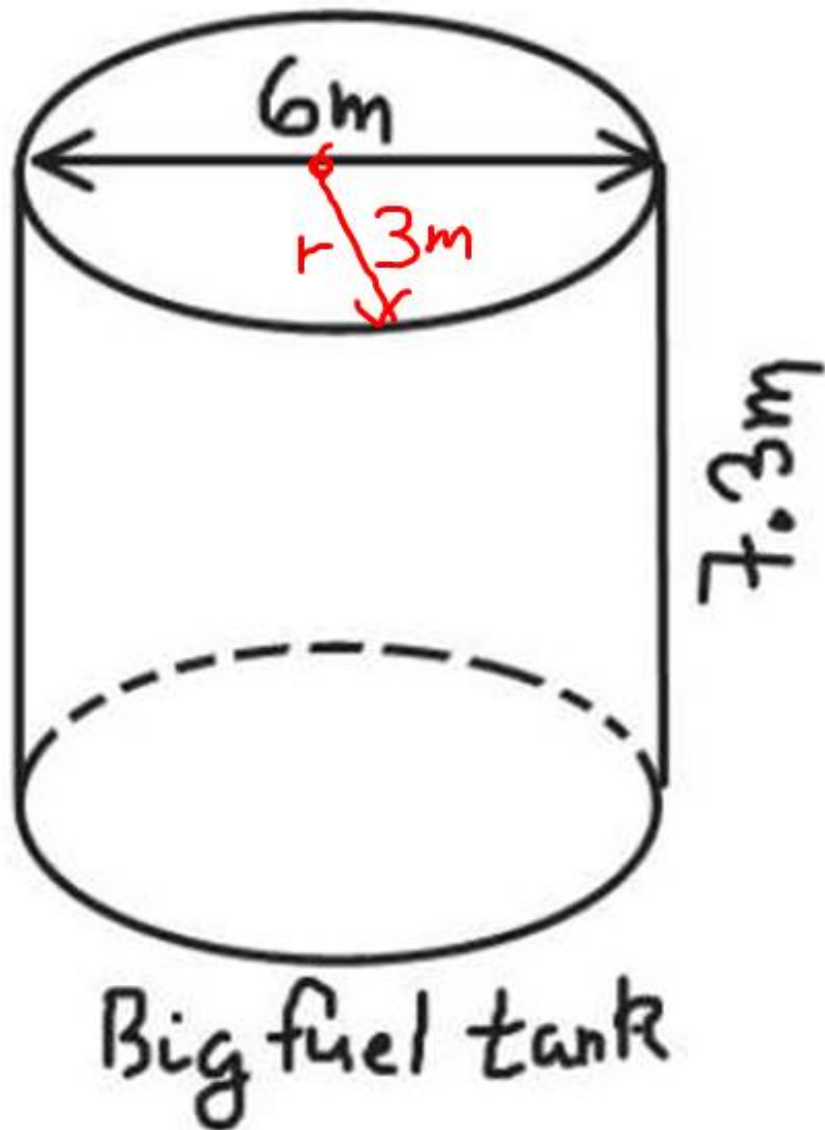
$$r = 0.40 = 40\% \text{ Interest}$$

Sounds typical!

$$\begin{aligned} A &= P + I \\ \downarrow \\ 660 &= 600 + I \\ I &= \$60 \end{aligned}$$

$$\begin{aligned} \frac{60}{150} &= \frac{150 \cdot r}{150} \\ 0.4 &= r \end{aligned}$$

Determine the volume of the entire large oil tank below. State your answer below.



$$\begin{aligned} \text{Vol}_{\text{cyl}} &= \pi \cdot r^2 \cdot h \\ &= \pi \cdot (3\text{m})^2 \cdot 7.3\text{m} \end{aligned}$$

$$= 206.40 \text{ m}^3$$

or if you only used
 $\pi \sim 3.14$
 206.30 m^3

5 years ago I was half my mom's age. Mom was 32 five years ago. How old am I now? State your answer below.

Lots of ways to solve!

Logic, guess and check,
work backwards,
graphing, algebra
.....

Logic & backwards

If mom was 32 five yrs ago And
I was half of 32, then I was
16 five years ago

If I was 16 five years then I
must be 21 now!

