

Gr11Ess Quiz Week 5

Week 5 Quiz! 40 minutes of work packed into 6 hours!

Get your cheat sheet out, paper, pencil, calculator, loan tables, etc.
or if you happen to be in class I will print out a version for you.

Diagrams provided may not be drawn to scale. Units of square cm can be expressed as cm^2 for example

Bonus questions count for 2 marks if you need the marks

Laurie takes a loan for \$7,300 to buy a used vehicle. The loan is at 25% interest for four years with monthly payments. How much interest does Wanda pay on this loan. [Careful, read the question][Use loan tables, but certainly check the answer with an App or website][select the best or closest answer] *

- \$242
- \$7300
- \$4319
- \$1825

$$33.16 \cdot \frac{7,300}{1,000}$$

$$= 242.07$$

monthly

$$242.07 / \text{month} \cdot 48 \text{ mon}$$

$$= \$11,619.36 \text{ Total Paid}$$

$$- 7,300.00 \text{ Principal}$$

$$= \$4,319.36 \text{ INTEREST}$$

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	1 Year Monthly
2%	\$84.24	\$42.54	\$28.64	\$21.70	\$17.53	\$9.20	\$
3%	\$84.69	\$42.98	\$29.08	\$22.13	\$17.97	\$9.66	\$
4%	\$85.15	\$43.42	\$29.52	\$22.58	\$18.42	\$10.12	\$
5%	\$85.61	\$43.87	\$29.97	\$23.03	\$18.87	\$10.61	\$
6%	\$86.07	\$44.32	\$30.42	\$23.49	\$19.33	\$11.10	\$
7%	\$86.53	\$44.77	\$30.88	\$23.95	\$19.80	\$11.61	\$
8%	\$86.99	\$45.23	\$31.34	\$24.41	\$20.28	\$12.13	\$
9%	\$87.45	\$45.68	\$31.80	\$24.89	\$20.76	\$12.67	\$1
10%	\$87.92	\$46.14	\$32.27	\$25.36	\$21.25	\$13.22	\$1
12%	\$88.85	\$47.07	\$33.21	\$26.33	\$22.24	\$14.35	\$1
14%	\$89.79	\$48.01	\$34.18	\$27.33	\$23.27	\$15.53	\$1
16%	\$90.73	\$48.96	\$35.16	\$28.34	\$24.32	\$16.75	\$1
18%	\$91.68	\$49.92	\$36.15	\$29.37	\$25.39	\$18.02	\$1
20%	\$92.63	\$50.90	\$37.16	\$30.43	\$26.49	\$19.33	\$1
25%	\$95.04	\$53.37	\$39.76	\$33.16	\$29.35	\$22.75	\$2
30%	\$97.49	\$55.91	\$42.45	\$36.01	\$32.35	\$26.36	\$2

Bonus Question - Problem Solve. The English teacher is randomly giving each student three different books to read, out of a total of four possible books. Teacher randomly grabs three different books and stuffs them in bags for the students. How many different bags of books are possible.

Book

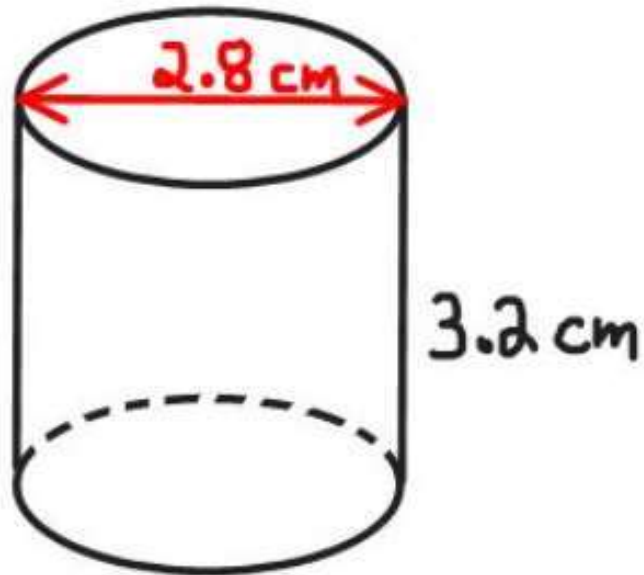
	A	B	C	D
<input type="radio"/> 10				
<input checked="" type="radio"/> 4	✓	✓	✓	
<input type="radio"/> 16	✓	✓		✓
<input type="radio"/> 6	✓		✓	✓
<input type="radio"/> 3		✓	✓	✓

4 ways

- List:
- ABC
 - ABD
 - ACD
 - BCD
- 4 ways

LOGIC:
How many ways can you leave out one!

Determine the surface area of this entire cylinder. State your answer below to nearest 0.01 cm² *



$$SA = 2\pi rh + 2\pi r^2$$

$$= 2 \cdot \pi \cdot 1.4 \cdot 3.2$$

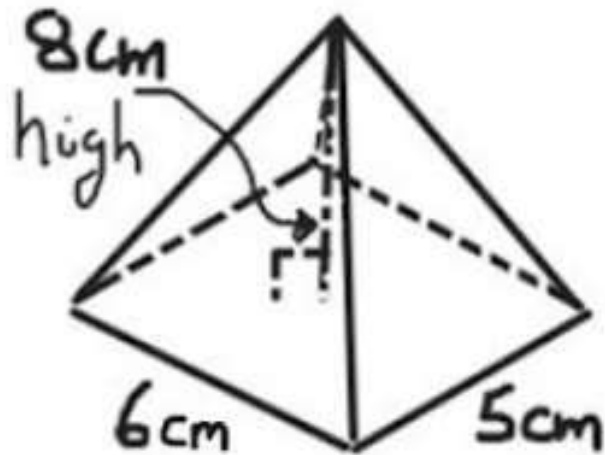
$$+ 2 \cdot \pi \cdot 1.4^2$$

$$= 2 \cdot \pi \cdot 1.4 \cdot 3.2 + 2 \cdot \pi \cdot 1.4^2$$

$$= 40.4637133$$

$$= 40.46 \text{ cm}^2$$

State the volume of this Rectangular Pyramid *



$$\begin{aligned} \text{Vol}_{\text{pyramid}} &= \frac{1}{3} \cdot \text{Base}_{\text{area}} \cdot h_{\text{obj}} \\ &= \frac{1}{3} \cdot (5\text{cm} \cdot 6\text{cm}) \cdot 8\text{cm} \\ &= \underline{(80\text{ cm}^3)} \end{aligned}$$

80 cubic cm

or

80 millilitres

80 ml

Dylan invests \$3,500 in his friend's software company. The friend promises to pay 10% Annual Percentage Rate (APR) interest and compounded quarterly for five years when Dylan gets paid back. The investment grows to a total amount of: [select best or closest answer] *

\$5,735

\$7,000

\$5,250

\$1,750

Compound Interest

$$A = P \cdot \left(1 + \frac{r}{s}\right)^{(n \cdot s)}$$

$$A = 3,500 \cdot \left(1 + \frac{0.1}{4}\right)^{(5 \cdot 4)}$$

$$A = \$5,735.16 \text{ what the investment is worth after 5 years}$$

Carla borrows 500 dollars from a Pay Day loan and ends up paying back the principal and interest of \$545 after 2 months. Determine the interest rate she was charged *

$$A = P + I \quad ; \quad I = P \cdot r \cdot t$$

$$\textcircled{1} \quad 545 = 500 + I \quad ; \quad I = \$45$$

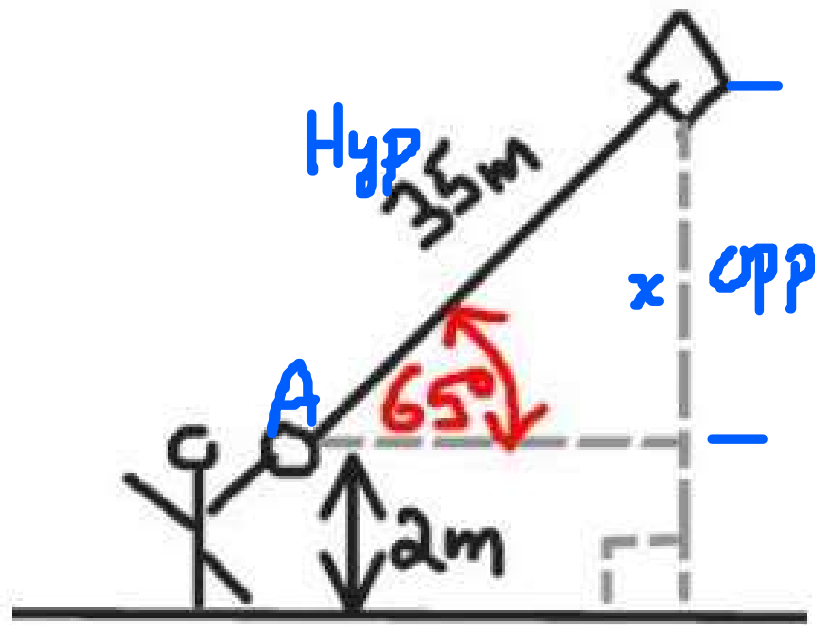
$$\textcircled{2} \quad I = P \cdot r \cdot t$$

$$45 = 500 \cdot r \cdot \frac{2}{12}$$

$$45 = 83.33\bar{3} \cdot r$$

$$r = \frac{45}{83.333\dots} = 0.54 = \textcircled{54\%}$$

Jen is flying a kite with her daughter. The string is 35 metres long. Jen is two metres tall. Jen measures the angle of elevation to be 65 degrees using her phone. State the height of the kite above the ground. State answer to the nearest 0.01 m accuracy as usual. *



$$\sin A = \frac{\text{OPP}}{\text{HYP}}$$

$$\sin 65^\circ = \frac{x}{35\text{m}}$$

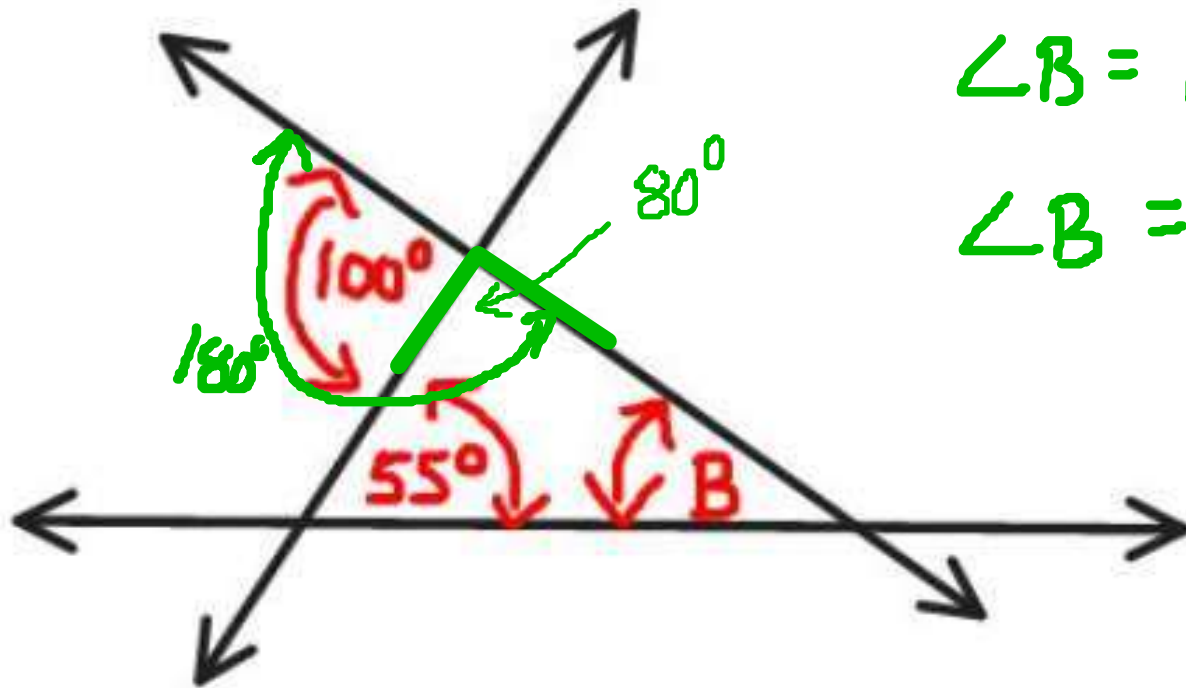
$$x = 35 \cdot \sin 65 = 31.72\text{m}$$

Jen's height $\rightarrow + 2.00\text{m}$

33.72m

The kite is
33.72m above
the ground

Triangle Sum Theorem. State the value of angle B *

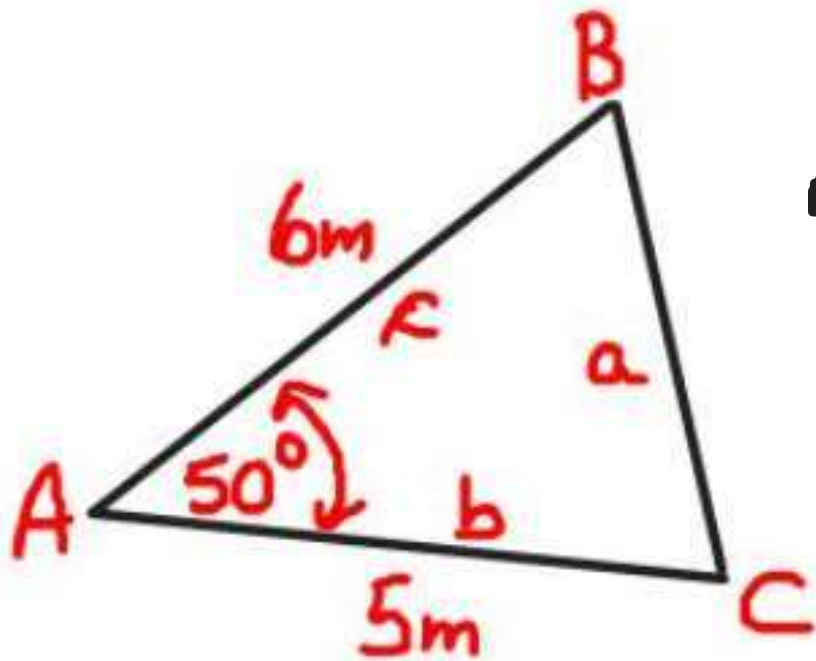


$$\angle B = 180^\circ - (80^\circ + 55^\circ)$$

$$\angle B = 180^\circ - 135^\circ$$

$$\angle B = 45^\circ$$

Bonus Question - Cosine Law. Calculate the length of side a. State that length below.



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

$$a^2 = 5^2 + 6^2 - 2 \cdot 5 \cdot 6 \cdot \cos 50^\circ$$

$$a = 4.74 \text{ m}$$

TLAR.

