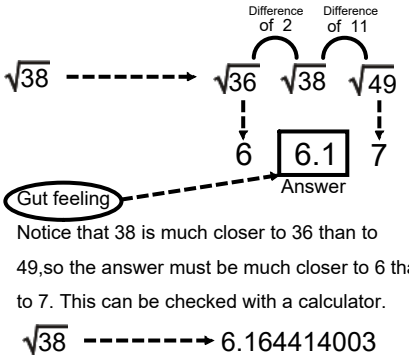
#5 WORK OF THE WEEK (Gr 8)

Due Thurs.,May 14th

I) Calculate the approximate sq. root without a calculator:

Ex)



Notice that 38 is much closer to 36 than to 49,so the answer must be much closer to 6 than to 7. This can be checked with a calculator.

$\sqrt{38}$ ⟶ 6.164414003

* Think of the perfect squares both above and below 38. Here is a list of a few perfect square (PS):

x # = PS
1 x1 = 1
2 x 2 = 4
3 x 3 = 9
4 x 4 = 16
5 x 5 = 25
6 x 6 = 36
7 x 7 = 49
8 x 8 = 64

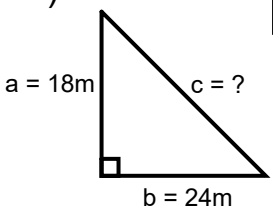
As you can see, 38 is in between 36 and 49. So those PS go under each square root. And the answer must be between 6 & 7.

a) $\sqrt{\quad}$ $\sqrt{26}$ $\sqrt{\quad}$

b) $\sqrt{\quad}$ $\sqrt{88}$ $\sqrt{\quad}$

II) Solve for the unknown side using the Pythagorean Theorem

Ex)



$c^2 = a^2 + b^2$, $a^2 = c^2 - b^2$, $b^2 = c^2 - a^2$

Use when looking for the longest side (across from right angle)

Use when looking one of the legs

Use when looking one of the legs

$c^2 = a^2 + b^2$ ⟵ Use when looking for longest side.

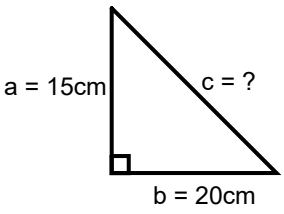
$c^2 = (18m)^2 + (24m)^2$ ⟵ Substitute the numbers in for a and b.

$c^2 = 324m^2 + 576\,m^2$ ⟵ These are the squares of 18 and 24

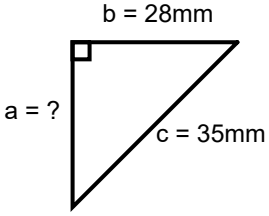
$\sqrt{c^2} = \sqrt{900\,m^2}$ ⟵ This is the sum of the squares, then take the sq. root of both sides.

c = 30m ⟵ Circle the final answer and include units.

a)



b)



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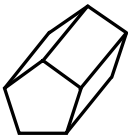
III) Create one net for each 3D object:

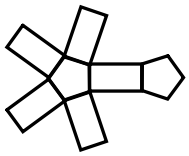
Ex)



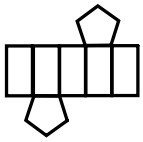
3D object

Pentagonal-based prism

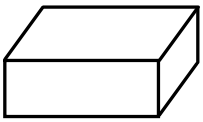
(heptahedron)



Possible Nets



a)

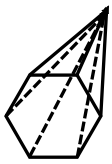


Rectangular-based prism

(hexahedron)

A possible net

b)

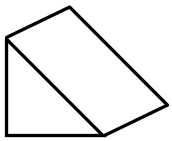


Hexagonal-based pyramid

(heptahedron)

A possible net

c)



Triangular-based prism

(pentahedron)

A possible net

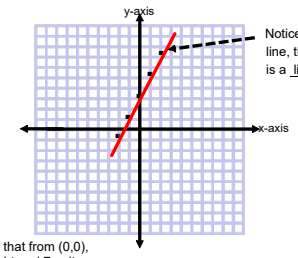
IV) Complete filling in the table, then plot the points on the Cartesian plane

Ex:

this means that to find the y-value, we multiply the x-value by 2,then add 3 to that answer.

x	y = 2x +3	(x,y)
-2	-1	(-2,-1)
-1	1	(-1,1)
0	3	(0,3)
1	5	(1,5)
2	7	(2,7)

this means that from (0,0), go 2 units right and 7 units up.



Notice that it forms a straight line, this means that y = 2x + 3 is a linear algebraic equation.

Try this one:

x	y = 3x +4	(x,y)
-2	-2	(-2,-2)
-1		
0		
1		
2