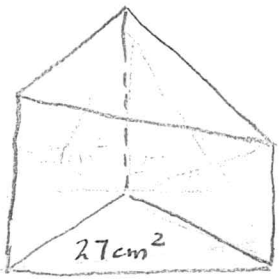
Math 8 Written Final Exam Practice

Each of the written questions will be on a 4 point scale seen below:

1	2	3	4
• Did not get the correct answer, but made a basic attempt (ie. drawing problem)	• Did not get the correct answer, but made a solid attempt to find the solution with more than just a basic attempt (ie. drawing problem, numerical manipulation and creation of equations)	• Correct answer • Shows the process of getting the correct answer however, missing some details in flow of answer	• Correct answer • Shows the process of getting the correct answer in detail

Practice questions:

1. The two ends of a right triangular prism are equilateral triangles. Each has an area of 27 cm^2. The total surface area of the prism is 390 cm^2. Draw the shape below, and calculate the area of each of the rectangular faces.



SA = 390cm²

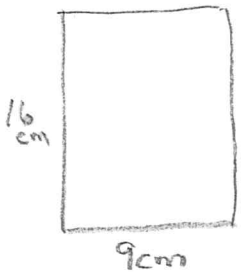
Δ1 27
Δ2 27
54

390
− 54
336

112
3)336
3
3
3
6
6
0

Each rectangular face is 112 cm^2.

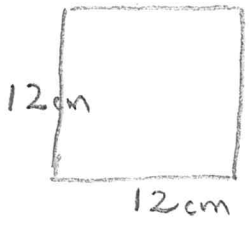
2. A square and a rectangle have the same area. The rectangle has length 9cm and height 16 cm. Find the area and perimeter of the square. Draw both shapes below, including dimensions.



A = l x w
A = 9 x 16
A = 144 cm^2

P = 2L + 2W
P = 2(9) + 2(16)
P = 18 + 32
P = 50cm

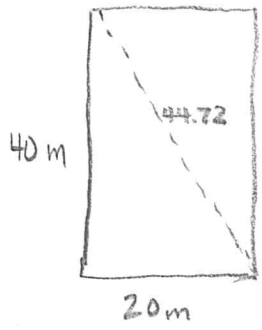
$\sqrt{144}$
12 x 12 = 144



A = l x w
A = 12 x 12
A = 144 cm^2

P = 4(s)
P = 4(12)
P = 48cm

3. Jacob takes a shortcut to school by walking diagonally across an empty lot. The rectangular lot is 20 meters wide and 40 meters long. How much shorter is the shortcut than a route on the sides of the lot? Show all your work.



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

$20^2+40^2=c^2$

$400+1600=$

$2000=c^2$

$\sqrt{2000}=\sqrt{c^2}$

$44.72=c$

$40+20=60$

59 9
60.00
44.72
15.28

15.28m shorter

4. At a store, 3 notebooks and 2 pencils cost $2.80. At the same prices, 2 notebooks and 5 pencils cost $2.60. Find the cost of one notebook and one pencil.

Too hard

Notebooks	Pencils	Total
3@.80	2@.20	$
240 +	40 =	2.80
Notebooks		
2@.80	5@.20	
1.60	1.00	$2.60

1 notebook = .80

1 pencil = .20

Total 1.00

$3n+2p=2.80$

$\frac{3n}{3}=\frac{2.80-2p}{3}$

$2n+5p=2.60$

$\frac{2}{2}\left(\frac{2.80-2p}{3}\right)+\frac{5p}{2}=\frac{2.60}{2}$

$3\left(\frac{2.80-2p}{3}+\frac{5}{2}p\right)=1.30(3)$

$2.80-\frac{4}{2}p+\frac{15}{2}p=3.90$

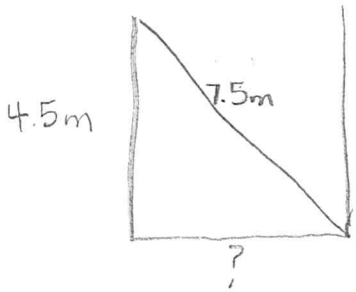
$2.80+\frac{11}{2}p=3.90$ 5.60

$\frac{11}{2}p=3.90-2.80$

$\left(\frac{2}{11}\right)\frac{11}{2}p=1.10\left(\frac{2}{11}\right)$

$0=2.2-20$

5. There are two flag poles that are 4.5 meters tall. The distance from the top of the left pole to the base of the right pole is 7.5 meters. What is the distance between the 2 flag poles?



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

$4.5^2 + b^2 = 7.5^2$

$20.25 + b^2 = 56.25$

$-20.25 \quad -20.25$

$b^2 = 36.00$

$b = \sqrt{36}$

$b = 6\text{ m}$

56.25
20.25
36.00

6. Mrs. Arcuri is planting her deck pots for the summer. She has four different type of flowers that she includes in her planters. They are Pansies, Petunias, Osteopernum, and Snap Dragons. The different colours are in the chart below. She is only going to put ONE TYPE OF EACH FLOWER in each planter. Draw a diagram showing the various combinations on colours that could go in each planter. How many different combinations can be made.

Pansies	Petunias	Osteopernum	Snap Dragons
Purple	Pink	Yellow	Yellow
White	Purple	Red	Pink
Yellow	White	Orange	Blue

$3 \times 3 \times 3 \times 3$

$9 \times 3 \times 3$

27×3

81

$3^4 = 3 \times 3 \times 3 \times 3$
$= 9 \times 3 \times 3$
$= 27 \times 3$
$= 81$

7. In his Marathon of Hope, Terry Fox ran 5373 km in 143 days. At this rate, approximately how many kilometres did he run in 10 days? Show your work.

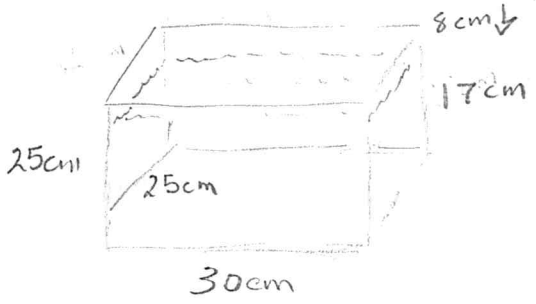
$\frac{5373}{143} = \frac{x}{10}$

$375 = x$

5373 : 143
— : 10

375.
143)53730
429
1083
1001
820
715
105

8. An aquarium has the dimensions of 30 cm (length) x 25 cm (height) x 25 cm (width). The water is 8 cm from the top. What is the volume of water, in cm^3, in the aquarium? Draw a diagram of the aquarium and add all necessary dimensions.

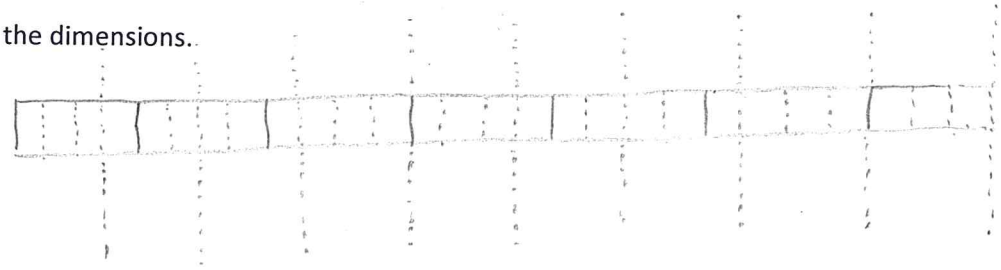


25
8
17cm

V = l x w x h
V = 30 x 25 x 17
V = 750 x 17
V = 12,750 cm^3

9. Gabby has two pieces of ribbon that are each $6\frac{3}{4}$ m long. She needs to cut each piece into smaller lengths of $\frac{3}{4}$ m. How many smaller pieces will she have in total? Draw the ribbon lengths and complete the dimensions.

$\left(6\frac{3}{4} \div \frac{3}{4}\right) \times 2 =$



$\left(\frac{27}{4} \times \frac{4}{3}\right) \times 2 =$

$= 18$

9 lengths of $\frac{3}{4}$ m each x 2

$= 18$