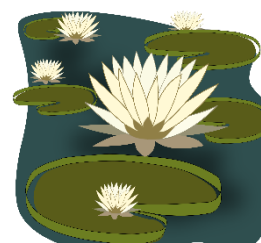


Math 4a. Homework 21.

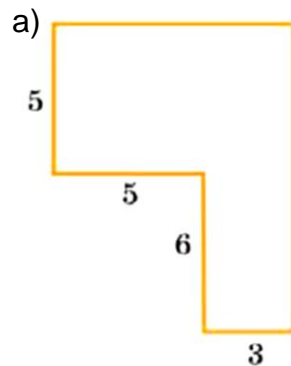


Problems marked with * are more difficult.

1. Draw a triangle. Measure the sides of the triangle, mark the midpoint of each side and draw medians. (remember, median is a segment, drawn from the vertex of a triangle to the midpoint of the opposite side)
2. A traveler to the island of Knights and Knaves meets a group of five people (call them A, B, C, D, E).
A says: "exactly one of us is a Knight"
B says: "exactly two of us are Knights"
C says: "exactly three of us are Knights"
D says: "exactly four of us are Knights"
E says: "all five of us are Knights"
Can you find out which of them are Knights? (Remember, Knights always tell the truth, and Knaves always lie).
3. Peter's speed is $5\frac{1}{5} \frac{km}{h}$. How far will he go in
 - a. 2 hours
 - b. $1\frac{1}{5}$ hour
 - c. 45 minutes
 - d. 125 minutes(Represent the result in kilometers and meters, for example: 1km 250 m.)
4. Distance $1\frac{1}{2}$ km Julia walked in 20 minutes. What was her speed?
Represent your answer in
 - a. $\frac{km}{h}$
 - b. $\frac{km}{min}$
 - c. $\frac{m}{h}$
 - d. $\frac{m}{min}$
 - e. $\frac{m}{s}$
5. 24 candies were divided between three brothers as 1:2:3. How many candies did each of the brothers get?
6. Water lilies are growing in a lake. The area covered with lilies is doubling every week. The lake was completely covered with lilies in 8 weeks. In how many weeks only half of the lake was covered?



7. Find the areas of the figures on the picture below (sizes are given in centimeters, all angles are right angles)



8. Evaluate the following expressions:

- $|-7| + |+5| + |+8| + |-10|$;
- $|+12| + |-2| - |+10| + |-9|$;
- $|+18| + |-2| - |-5| - |-15|$;
- $|-10| + |-2| - |-8| + |-5|$;

9. Solve the following equations:

$$\begin{aligned} -8 + x &= -10; \\ -8 + x &= -8; \\ x + 5 &= -3; \end{aligned}$$

$$\begin{aligned} -8 + x &= -3; \\ x + 5 &= 10; \\ x + 5 &= -8. \end{aligned}$$

10. Evaluate the following expressions as shown:

$$\text{a) } -3 - 7 = -3 + (-7) = -(3 + 7) = -10;$$

- | | | | |
|-----------------|------------------|------------------|-------------------|
| б) $-4 - 8$; | в) $-5 - 2$; | г) $-8 - 14$; | д) $-10 - 10$; |
| е) $-20 - 60$; | ж) $-11 - 23$; | з) $-28 - 17$; | и) $-5 - 91$; |
| к) $-92 - 18$; | л) $-240 - 14$; | м) $-50 - 105$; | н) $-200 - 400$. |

11. Find:

- a. 1% from 100
- b. 7% from 200
- c. 100% from 49
- d. 1% from 300
- e. 20% from 15

- f. 120% from 250
- g. 5% from 50
- h. 25% from 48
- i. 200% from 30

12. Solve the following equations:

$$0.12 + x = 0.4$$

$$x - 5.4 = \frac{1}{6}$$

$$3 - x = 0.003$$

$$x + \frac{1}{8} = 1.375$$