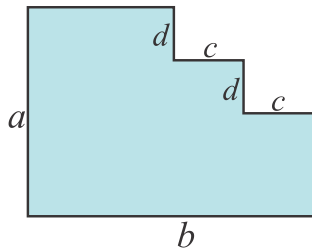


1. A pipe can drain a swimming pool in 6 hours. The pool is $\frac{4}{5}$ full of water. How many hours and minutes will it take to drain it?

2. Find the expression that will give you:
 - a) the perimeter of the figure below
 - b) the area of the figure below



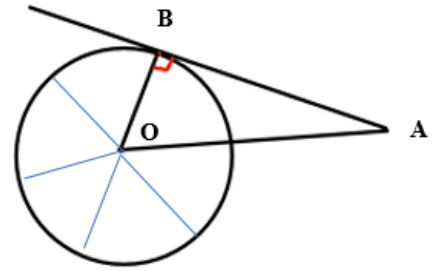
3. There are 6 false equalities below. Replacing only one stick in each of them makes the equality true. Find the stick and show where to move it:

a) $XXI + X = II$ d) $V - V = I$

b) $X = VII - III$ e) $X + X = I$

c) $V - V = XII$ f) $V - I + V = II$

4. Find the measurement of the angle OAB (it is the angle with the vertex "A")



5. Compute the value of the expressions $9a^2$, $(9a)^2$, $-9a^2$, $(-9a)^2$ if :

- a) $a = \frac{1}{6}$
- b) $a = -0.1$
- c) $a = -\frac{2}{3}$
- d) $a = 0.4$

6. Rewrite the following expression without parenthesis:

$$\left(\frac{1}{2} + a\right)(2 + a) =$$

$$(n - a)(n + a) =$$

$$(a + b)(a + b) = (a + b)^2 =$$

$$(2a + 2b)(b - c) =$$

7. * In a restaurant's dessert menu chocolate mousse cake is 25% more expensive than their cheese cake. By how many percent is the cheese cake less expensive than the chocolate mousse cake?

8. Julia has to write a 32-pages paper in 3 days. On the first day she wrote $\frac{3}{8}$ of the paper, one the second day she wrote $\frac{1}{4}$ of the paper. How many pages does she need to write on the third day?

1. 3 identical books and 5 identical notebooks costs 95 dollars, but 1 book and 2 notebooks cost 33 dollars. What is the price of one book and one notebook? (*Hint: use a system of equations and substitution*)

9. I have 15 new books to choose from.

A) I have a 5-day vacation and I want to read 1 book every day. How many possible ways are there for me to read these 5 books?

B) I have a 3-day long vacation and I want to read 1 book every day. How many possible ways are there for me to read these 3 books?

10. Compute:

a. $\left(-\frac{1}{2}\right)^5$

b. $\left(-\frac{2}{3}\right)^4$

c. $\left(-\frac{4}{5}\right)^3$

d.

11. Compute:

a. $-3 + \left(-1\frac{1}{5}\right) =$

b. $-3\frac{8}{19} + \left(-1\frac{11}{19}\right) =$

c. $-7\frac{1}{3} + \left(-1\frac{2}{3}\right) =$

12. Solve:

$$\frac{\frac{3}{4} - \frac{1}{8}}{\frac{1}{4} + \frac{3}{16}} - \frac{3}{7} =$$

13. How many three digit numbers can be composed from digits 0, 1, 2, 3 if

a. repetition of digit is allowed

b. repetition of digit is not allowed?

14. On a picture on the right the caterpillar wants to go from vertex G to vertex E on the cube.

Draw the shortest way for it to go. What will be the shortest way to go from the vertex G to vertex A? Find all possible solutions.

