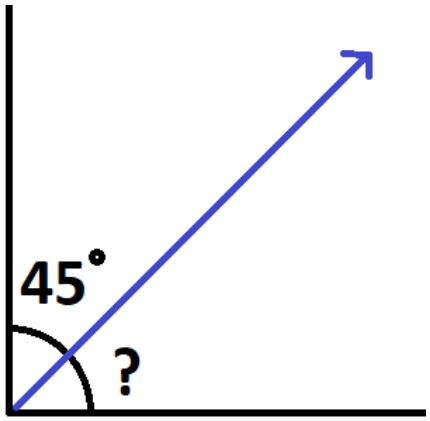
Part 3. Math Practice Test – Coordinate and Plane Geometry

This practice test is based off the Alexander College Math Placement Test Study Guide, but is not comprehensive of that study guide. The study guide can be found at https://alexandercollege.ca/admissions-and-registration/placement-testing/. It is highly encouraged you read through the study guide in addition to this test.

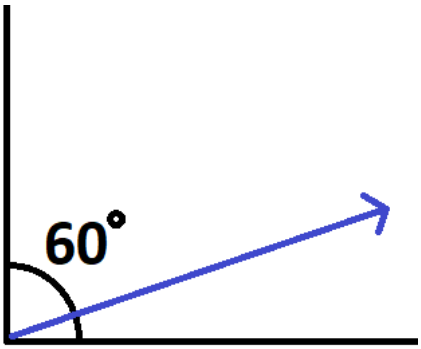
Do not use a calculator

1) Using the pictures in each question, find the unknown angle.

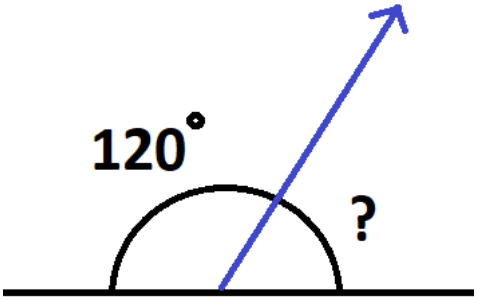
a.



b.

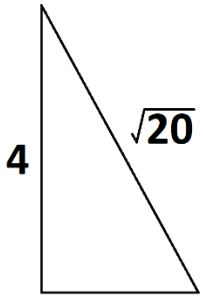


c.

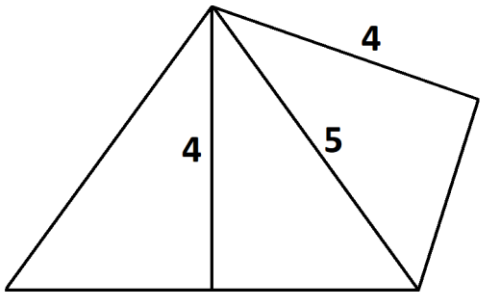


2) Find the area of the following shapes:

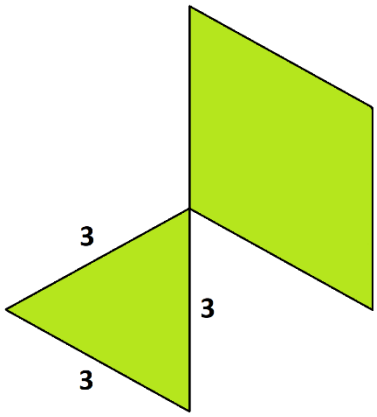
a.



b.

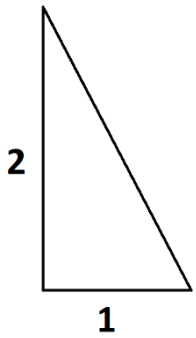


c.

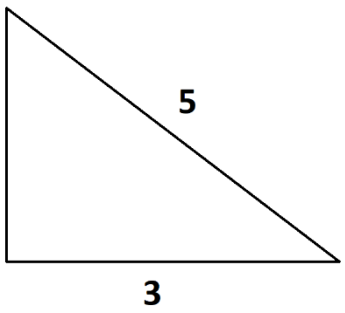


3) Find the length of the unknown side for the following triangles:

a.

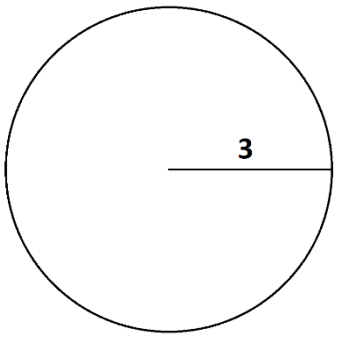


b.

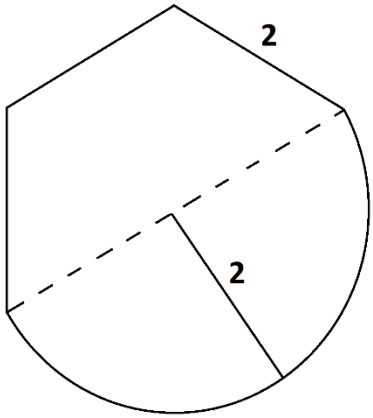


4) Find the perimeter of the following shapes:

a.

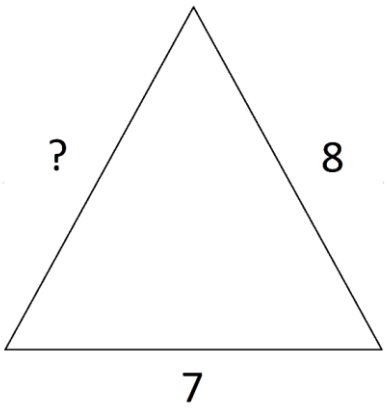


b.

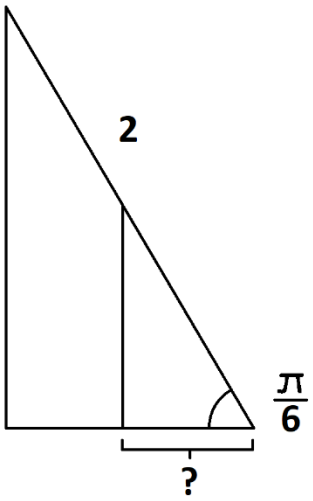


5) Solve for the unknown side length for the following types of triangles: (for help: https://youtu.be/D5lZ3thuEeA)

a.

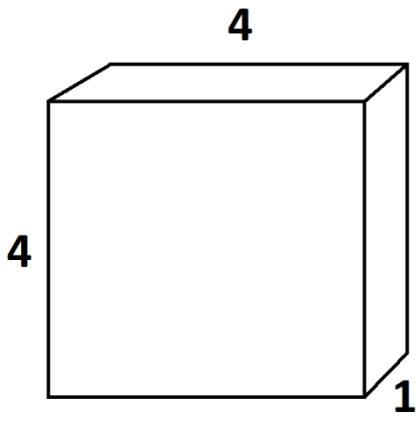


b.

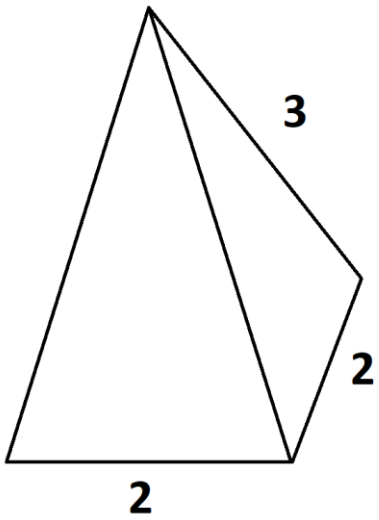


6) Find the surface areas of the shapes below:

a.

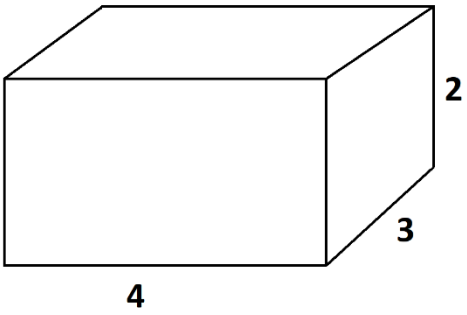


b.

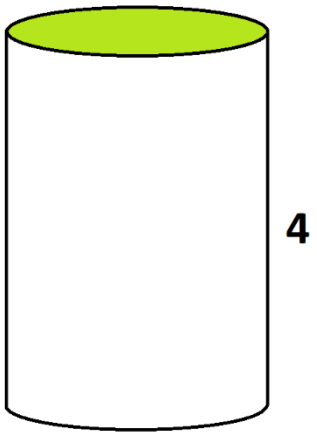


7) Find the volumes of the shapes below:

a.



b. The area of the shaded region is 2π.



8) Find the equation of the line that passes through the two points, as well as the distance between the two points:

   a. $(0, 1)$ and $(5, 1)$

   b. $(1, 2)$ and $(5, 4)$

9) Find the equation of the line that has slope m and y-intercept b below:

   a. $m = 3$ and $b = 0$

   b. $m = \frac{1}{2}$ and passes through $(5, 4)$

   c. $m = 2$ and passes through $(1, 1)$

10) Find the equation of the line that has slope m and y-intercept b below:

   a. $m = 3$ and $b = 0$

b. $m = \frac{1}{2}$ and passes through $(5, 4)$

c. $m = 2$ and passes through $(1, 1)$

11) Given the equations of two lines, determine if they are: parallel, perpendicular, or neither: (for help: https://www.purplemath.com/modules/slope3.htm)

a. $y = \frac{1}{2}x + \frac{3}{2}$ and $y = \frac{1}{2}x$

b. $y = \frac{3}{5}x - 1$ and $y = 5x + 2$

c. $y = 8x + 21$ and $y = -(\frac{1}{8}x + 93)$