

Basic Mathematics 1 (BMETETOPB22). **SAMPLE TEST 1.** October 8, 2015.
K. 351/A. **60 minutes.**

1. The area of a rhombus is **96**, the perimeter of this rhombus is **40**. Find the sides, the diagonals of the rhombus. ($2+2*3=8\%$)
2. One interior angle of a regular polygon is **120°** , the radius of the circumscribed circle is **4**. Find for this polygon (i) the number, length of sides, (ii) number of diagonals, (iii) sum of interior angles, and (iv) the area of inscribed circle. Solve the same problem if the angle is **140°** . ($6*2=12\%$)
3. The area of a circle is 16π . Find the perimeter, the area of the sector, segment of this circle with angle **60°** . ($2*5=10\%$)
4. The radius of a cone is **2**, the surface area of the cone is $4\pi(1+\sqrt{2})$. Find (i) the volume of the cone and (ii) the surface area of the circumscribed sphere of this cone. ($7+3=10\%$)
5. A prism has equal edges. Its base is an equilateral triangle. The surface area of this prism is $12+2\sqrt{3}$. Find (i) the length of edges, (ii) the volume of the prism. ($2*5=10\%$) *Good Luck!*

Basic Mathematics 1 (BMETETOPB22). **SAMPLE TEST 1.** October 3, 2016.
K. 351/A. **60 minutes.**

1. The radius of the circumscribed circle of a regular **12-sided** polygon (dodecagon) is **4**. Find (i) the sides, the angles, (ii) the number, and the length of diagonals, (iii) the area of this polygon. ($8*1=8\%$)
2. The area of a rhombus is **24**, the perimeter of this rhombus is **20**. Find the sides, the diagonals of the rhombus. ($1+3=4\%$)
3. The perimeter (circumference) of a circle is **8π** . Find the perimeter, the area of the sector, segment of this circle with angle **45°** . ($4*1=4\%$)
4. The radius of a cylinder is **2**, its volume is **16π** . Find the surface area this cylinder. Find the surface area, volume of the similar cylinders with radius **1** and **4**. ($2+4*0,5=4\%$)
5. The base of a pyramid is a square of diagonal $6\sqrt{2}$. Its height is **4**. Find (i) the surface area, (ii) the volume of the pyramid. ($2*2,5=5\%$) *Good Luck!*