(*d*) $r_1 = 4R \sin\frac{A}{2}\cos\frac{B}{2}\cos\frac{C}{2}$, with symmetrical expressions for r_2 and r_3.

(*e*) $r = 4R \sin\frac{A}{2}\sin\frac{B}{2}\sin\frac{C}{2}$.

25. Two wheels with radii r, r', have their centres d feet apart, and lie in the same plane. Find the length of the belt which goes around the wheels and (*a*) crosses between them, (*b*) does not cross between them.

26. In Ex. 25 (*a*), if $r+r'$ is constant, show that the length of belt is constant.

27. In Ex. 25, the wheels are 15 and 20 inches in diameter, and the axes are 120 inches apart. Find the length of (*a*) the open belt, (*b*) the crossed belt.

28. When a material body rests on an inclined plane, show that the ratio of the force tending down the plane to the pressure normal to the plane is the tangent of the angle of inclination of the plane.

When a body rests on a plane, and the plane is inclined until the body is just at the point of sliding down it, the tangent of the angle of inclination is called the *coefficient of friction*; and under reasonable conditions the coefficient of friction is constant for the same materials in the body and the plane.

Then the amount of friction, which acts as a force opposing motion, is the weight of the body multiplied by the coefficient of friction.

29. If the coefficient of friction of iron on iron be 0·16, find the inclination of an iron plane upon which an iron block is at the point of sliding.