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MISCELLANEOUS PROBLEMS.

1. The three sides of a triangle are 12, 20, and 28; what is the area?

Ans. $60\sqrt{3}$.

2. Find the difference between the area of a triangle whose sides are 3, 4, and 5 feet; and the area of an equilateral triangle having an equal perimeter?

Ans. ·928 of a square foot.

3. There is a segment of a sphere, the diameter of whose base is 24 inches, and its altitude 10 inches; required its solidity?

Ans. 2785·552 inches.

4. There is a bushel in the form of a cylinder, whose depth is 8 inches, and breadth $18\frac{1}{2}$ inches; required to determine the breadth of another cylindrical vessel of the same capacity as the former, whose depth is only $7\frac{1}{2}$ inches?

Ans. 19.107 inches.

5. A ladder 40 feet long, may be so planted, that it shall reach a window 33 feet from the ground on one side of the street; and by only turning it over, without moving the foot out of its place, it will do the same by a window 21 feet high on the other side; what is the breadth of the street?

Ans. 56 feet $7\frac{1}{4}$ inches.

6. In turning a one-horse chaise within a ring of a certain diameter, it was observed that the outer wheel made two turns while the inner made but one; the wheels were both 4 feet high; and supposing them fixed at the statutable