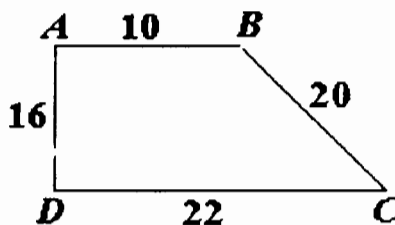


8. Let $\triangle ABC$ be a right triangle with area 16 and hypotenuse 7. Let $\triangle A'B'C'$ be a similar triangle with area x and hypotenuse 5. Suppose y is the number of diagonals in a convex diagram. Find xy in simplified fraction form.
9. If $n - m = 2$, $n - p = 4$, $p + r = -2$, and $r - q = 3$, what is the value of $m + q$?
10. In trapezoid $ABCD$, shown below, $AB \parallel DC$, $AD \perp DC$, $AB = 10$, $BC = 20$, $CD = 22$, and $DA = 16$. If the trapezoid is revolved about the segment DC , what is the volume of the resulting solid?



Answers

1. 1764π
2. $4/3$
3. 184
4. 31
5. $\left(\frac{24b + 15c + 4d}{12}\right)$
6. 12
7. $720/17$
8. $2000/7$
9. -3
10. 3584π