

November 22, 2013; 5 minutes

Name: _____

This quiz is *open-note*, but no books or calculators may be used. You don't need to give any justification for your answers.

1. (9 points) **Without calculation**, decide whether each of the integrals below is positive, negative, or zero. Here W is the solid region bounded by $z = \sqrt{x^2 + y^2}$ and $z = 5$ with $x \geq 0$.

(a) $\iiint_W x \, dV$

(b) $\iiint_W (z - 5) \, dV$

(c) $\iiint_W y \, dV$