

$$8. \int_0^{0.05} 250x dx = 0.3125\text{J}$$

$$10. \int_0^{3/4} 24x dx = 6.75 \text{ ft-lbs}$$

12. 8cm

14. There are different-looking integrals that work equally well, depending on which way you think of

$$\text{things: } \int_0^6 9.8 \cdot 8 \cdot x dx = \int_0^6 9.8 \cdot 8 \cdot (6-x) dx = 1411.2\text{J}$$

$$16. \int_0^{80} (40 - \frac{1}{10}x) dx + 320 = 3200 \text{ ft-lbs}$$

$$18. \int_5^{10} [2(x-5)(2.5)] dx = 62.5 \text{ ft-lbs}$$

$$20. \int_1^5 9000\mathbf{p} x dx = 108,000\mathbf{p} \text{ ft-lbs}$$

$$22. \int_{-3}^3 9800\mathbf{p} (x+4)(9-x^2) dx = 1,411,200\mathbf{p} \text{ J}$$

$$24. \int_0^6 62.5 \cdot 20x \cdot (6-x) dx = 45,000 \text{ ft-lbs}$$

$$26. \int_0^3 9.8 \cdot 900\mathbf{p} (x+4)(9-x^2) dx = 813,645\mathbf{p} \text{ J}$$