1. No. The tension force is perpendicular to the direction of motion.

2. When his toe is in contact with the ball, the toe asserts a force on the ball so it does work. He is not doing work on the ball once the contact is lost as there is no force from the toe on the ball anymore. When the ball is in motion, the gravity and air resistance does work on the ball.

3. $\frac{KE1}{KE2} = (\frac{v_1}{v_2})^2 = (\frac{5}{25})^2 = \boxed{\frac{1}{25}}$.

4. $KE = \frac{1}{2}mv^2 = (0.5)(1250)(11)^2 = \boxed{7.6 \times 10^4 \text{ J}}$.

5. $\frac{1}{2}mv^2 = KE$. Thus, $(0.5)(0.55 \times 10^{-3})v^2 = 7.6 \times 10^4$ so $v = \boxed{1.66 \times 10^4 \text{ m/s}}$.

6. $T - mg = ma$ or $T = mg + ma = m(g + a) = (8.0 \times 10^3)(10 + 1) = 8.8 \times 10^4$. $W_T = (8.8 \times 10^4)(30.0) = \boxed{2.64 \times 10^6 \text{ J}}$. $W_w = (8.0 \times 10^3)(10)(-30) = \boxed{-2.4 \times 10^5}$.

7. The acceleration is $a = \frac{F-W}{m} = \frac{1500-500}{50} = 20 \text{ m/s}^2$. The initial velocity is $0 = v_0^2 + 2ax$ or $v_0^2 = 2(20)(5.0) = 200 \text{ (m/s)}^2$. Then, $v^2 = 2gx$ or $x = \frac{v^2}{2g} = \frac{200}{2(10)} = 10$ m. Thus, the total distance is $10 + 5 = \boxed{15 \text{ m}}$.

8. Let the distance traveled on the incline be L so the height where the monkey stops will be $h = L \sin 25$. With energy conservation, we have

$$\frac{1}{2}mv^2 = mgh + \mu mg \cos 25L = mgL(\sin 25 + \mu \cos 25).$$

or

$$L = \frac{v^2}{2[g(\sin 25 + \mu \cos 25)]} = \frac{(4)^2}{2(10)(\sin 25 + .20 \cos 25)} = \boxed{1.32 \text{ m}}.$$

9. $\frac{1}{2}mv^2 = \mu mgd$ or $v = \sqrt{2\mu gd} = \sqrt{2(.05)(10)} = \boxed{4.6 \text{ m/v}}$.

10. $T_1 = m\frac{v_1^2}{R_1}$ and $T_2 = m\frac{v_2^2}{R_2}$. Thus, $v_2^2 = \frac{R_2}{R_1}4v_1^2$.

$$W = KE_2 - KE_1 = \frac{1}{2}m(1 - 4\frac{R_2}{R_1})v_1^2 = (0.5)(0.90)(1 - 4\frac{14}{16})(22)^2 = \boxed{-540 \text{ J}}.$$