

WORK-ENERGY

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Actor in a Supporting Role, Not the Dashing Leading Man (2012 Audi A6)



WILLKOMMEN The redesigned Audi A6 sedan may not be as flashy as the A7 hatchback, but the cabin is fresh and welcoming. [More Photos »](#)

THE new [Audi A6](#) has arrived. And from its debut on the luxury stage until the end of its days, this sedan

Never heard of him? Well, you may know his first cousin and fellow actor, one Thomas Cruise Mapother IV.

As with the Mapothers, Audi has a pair of performing cousins in the A7 hatchback and A6 sedan. One is matinee-idol handsome. The other may be just as talented, yet seems destined for such cast credits as "Second Banker in Bar" or "Allergic Florist."

But only the A6 offers a more affordable 2-liter turbo 4-cylinder with 211 horses and a continuously variable transmission, starting at \$42,575.

Riding on a 2.7-inch longer wheelbase, with a body 0.8 inch wider, the redesigned A6 grows a bit roomier inside. Yet the

V-6 model's **unloaded weight (4,045 pounds)**. The Audi needs no gimmicks to perform like a champ. **The power of the V-6 has grown to 310 horses**, up 10 from last year, and 325 pound-feet of torque, a gain of 15.

The A6 reaches 60 m.p.h. from a stop in just 5.4 seconds. So, will it be the A6 or A7? The window sticker reveals another difference: The price of style, which Audi pegs at an eye-opening \$9,350. **The A6 3.0 starts at \$50,775**, the A7 at \$60,125. (Smartly equipped, my A6 test car reached \$60,130).

ANSWERS: (a) 126.4 slugs, (b) 16.296 ft./s , (c) ~2060 lb., (d) 237,6 ft., (e)489,456 ft. lb. (f) 489,421 ft. lb. , (g) ~ 181,280 ft. lb. /s or ~ 348.62 HP, (h)(g) was done with unloaded weight of A6.

QUESTIONS: (a) Find the mass of this car in slugs?
(b) Find this cars acceleration 0-60 mph in ft./s² ?
(c) Find the force this car experienced 0-60 mph?
(d) Find distance (in ft.) this car traveled 0–60 mph?
(e)Find work (in ft. lb.) done 0-60 mph?
(f) Find work done from $W = (\Delta)K + (\Delta)U$.
In other words find the change in K? (g) Find the power(in ft lb/s and HP)of the engine at 60 mph? (h) How does answer to (g) compare with stated HP?

HINTS: 60 mph = 88 ft./s , $W = F X$, $K = 1/2 mv^2$,
Instantaneous Power = $F V$, $X = V_{\text{average}} t$, $a = (\Delta)v/t$

ANSWERS: See below