

Jan. 30, Math 1333-001, 10 – 10:50 am, NTB 300  
Worksheet

- 1) During a compression check, the cylinder with the highest compression was measured at 156 psi, while the cylinder with the lowest compression was measured at 136 psi. If the maximum allowable reduction from the highest compression is 15%, does the engine fall within the allowable limit?
- 2) A sprayer discharges 120 cc of herbicide in 9 seconds. For how many minutes should the sprayer be discharged in order to apply 2000 cc of herbicide.
- 3) A motor is rated at 2.5 hp if found to deliver 1.8 hp when connected to a pump. What is the efficiency of this system?
- 4) An electrical resistor is rated at 4500 ohms  $\pm 3\%$ . Express this tolerance in ohms and find the tolerance limits.
- 5) How many turns will a pinion gear having 16 teeth make if a ring gear having 48 teeth makes 120 turns.
- 6) A printer sells for \$374 after a 12% discount. What was the original price of the printer?
- 7) A pair of belted pulleys have diameters of  $8\frac{3}{4}$  in and  $5\frac{5}{8}$  in. If the smaller pulley turns at 630 rpm, how fast will the larger one turn?

Answers:

- 1) The reduction is  $\approx 12.8\%$ ; yes the engine falls within the allowable limits.
- 2) It should be discharged for 2 1/2 minutes.
- 3) The efficiency is 72%.
- 4) The tolerance is  $\pm 135$  ohms. The tolerance limits are 4365 and 4635 ohms.
- 5) It will make 360 turns.
- 6) The original price was \$425.
- 7) The larger one turns at 405 rpm.