

Monday, May 11/15

Science 122

<http://mvhs-sherrard.weebly.com/>

1. Summary of Thermal Processes
  2. Worksheet - Thermal Processes
  3. Second Law of Thermodynamics
  4. Heat Engines - Page 427
  5. Cutnell - Page 446: #40-45
- 
6. Carnot's Principle and Carnot's Engine - Page 428
  7. Cutnell - Page 446: #46-51
  8. Third Law of Thermodynamics
- 

P. 413

# 33.

 $N_e$ 

$$V = 680 \text{ m}^3$$

$$P = 1.01 \times 10^5 \text{ Pa}$$

$$T_i = 293.2 \text{ K}$$

$$T_f = 294.3 \text{ K}$$

$$U = \frac{3}{2} PV = \frac{3}{2} nRT = \frac{3}{2} N k_B T$$

$$\Delta U = \frac{3}{2} nRT_f - \frac{3}{2} nRT_i$$

$$\Delta U = ?$$

$$\Delta U = \frac{3}{2} nR (T_f - T_i)$$

$$PV = nRT$$

$$\Delta U = \frac{3}{2} \left( \frac{P_i V_i}{T_i} \right) (T_f - T_i)$$

$$nR = \left( \frac{PV}{T} \right) = \frac{P_f V_f}{T_f}$$


$$\Delta U = 3.87 \times 10^5 \text{ J}$$

↑

$$P = \frac{W}{E} = \frac{\Delta E}{E}$$

★

Monday, May 11/15  
Physics 122

 <http://mvhs-sherrard.weebly.com/>

---

1. Test: Unit 2 - Monday, May 11/15

2. Textbook: Page 638, #4-5  
Handout: Charge and Coulomb's Law } HW - Tuesday



Monday, May 11/15  
Science 10

---

1. Questions?

Concepts - Page 358: #3-6, 8

Worksheet: Matching a Graph to a Story

Worksheet - Distance vs. Time Graphs (Add to Task Sheet)

Omit #1c, #4

2. Formative Assessment - Vector and Scalar Quantities

3. Demo - Gecko -> Period 4

4. 100 Acre Wood - Add to Task Sheet

5. Representing Vector Quantities - P4

6. Resultant Displacement - P6

---

7. Velocity

8. Calculating Velocity

9. Average Velocity

**Formative Assessment - Vector and Scalar Quantities**

Monday, May 11/15

Page 416, #1 and 4

Complete the table below.

Physical Quantity	<b>Scalar</b> Quantity	Vector Quantity	Symbol
time	✓		$t$
position		✓	$d$
<b>s</b> peed	✓		$v$
distance	✓		$s$
displacement		✓	$\Delta d$

## Understanding Concepts - Page 358: #3-6, 8

---

#3 a) 5.2 km/h

b) 14 km/h

c) 7.6 km

d) 4.8 h

#4. 225 km

#5. Show that  $1 \text{ m/s} = 3.6 \text{ km/h}$

#6. a) 26 m/s

b) 76 km/h

#8. a) 1.77 s

b) 1227.7 km/h  $\rightarrow 1.23 \times 10^3 \text{ km/h}$

## Distance Time Graphs

#1. (a) (i) 30 min or 0.5 hour

(ii) 120 km

(b) 60 km/h

(c) omit

← calc. slope =  $V_{av}$

$$\begin{pmatrix} 3, 200 \\ 5, 320 \end{pmatrix}$$

#2. (a) 15 min

(b) 15 km

(c) Complete graph.

#3. (a) 45 min

(b) 5 km

#4. Omit

#5. (a) 1 km

(b) 5 minutes

(c) 2 km