

Problem 1: Consider the following quantities: distance x , velocity v , acceleration a , and time t .

Which of the following are dimensionally consistent? (choose all that apply)

Grade = 68.75%

Correct Answer	Student Final Submission	Feedback
$x = 3vt$, $v = \frac{x^2}{at^3}$, $v = 5at$, $a^3 = \frac{x^2v}{t^5}$	$x = 3vt$, $v = \frac{x^2}{at^3}$, $x = t$, $a^3 = \frac{x^2v}{t^5}$, $xa^2 = \frac{x^2v}{t^4}$	The units for x are m. Are the units for t also m? The units of xa^2 are $m \cdot (m/s^2)^2 = m^3/s^4$. What are the units of x^2v/t^4 ? One or more choices are missing from your selection. One or more choices in your selection are extra choices.

Grade Summary

Deduction for Final Submission **31.25%**

Deductions for Incorrect Submissions, Hints and Feedback [?] **0%**

Student Grade = 100 - 31.25 - 0 = 68.75%

Submission History

All Date times are displayed in Central Standard Time. Red submission date times indicate late work.

Date	Time	Answer	Hints	Feedback
1 Sep 25, 2024	1:48 PM	$x = 3vt$, $v = \frac{x^2}{at^3}$, $x = t$, $a^3 = \frac{x^2v}{t^5}$, $xa^2 = \frac{x^2v}{t^4}$		

Problem 2: A particular gasoline tank can hold **47.5** kg of gasoline when full.

What is the depth, in meters, of the tank if it is a rectangular box **0.45**-m wide by **0.85**-m long? The density of gasoline is typically 0.680×10^3 kg/m³.

Grade = 0%

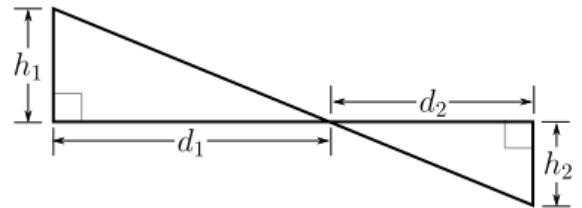
Correct Answer	Student Final Submission	Feedback
$d = 0.1826$	$d = 0.7300$	
Grade Summary		
Deduction for Final Submission		100%
Deductions for Incorrect Submissions, Hints and Feedback [?]		0%
Student Grade = 100 - 100 - 0 = 0%		

Submission History

All Date times are displayed in Central Standard Time. Red submission date times indicate late work.

Date	Time	Answer	Hints	Feedback
1 Sep 25, 2024	1:51 PM	$d = 0.7300$		

Problem 3: The intersection point of two lines acts as the vertex of two right triangles, as shown. The right angles and the legs of the triangles have been labeled. The relative scaling of side lengths and angle measures may differ from the illustration.



If $d_1 = 11.56$, $h_1 = 5.23$ and $h_2 = 2.31$, enter a value for side length d_2 .

Grade = 100%

Correct Answer	Student Final Submission	Feedback
$d_2 = 5.106$	$d_2 = 5.1058$ $d_2 = 5.106$	
Grade Summary		
Deduction for Final Submission		0%
Deductions for Incorrect Submissions, Hints and Feedback [?]		0%
Student Grade = 100 - 0 - 0 = 100%		

Submission History

All Date times are displayed in Central Standard Time. Red submission date times indicate late work.

Date	Time	Answer	Hints	Feedback
1 Sep 25, 2024	1:13 PM	$d_2 = 5.1058$ $d_2 = 5.106$		

Problem 4: Convert the angle, specified in degrees, to an angle specified in radians.

Enter an angle, in radians, which is equal to 238.85° .

Grade = 100%

Correct Answer	Student Final Submission	Feedback
$\theta = 4.169$ rad	$\theta = 4.1687189$ $\theta = 4.169$ rad	

Grade Summary

Deduction for Final Submission **0%**
Deductions for Incorrect Submissions, Hints and Feedback **[?] 0%**

Student Grade = 100 - 0 - 0 = 100%

Submission History

All Date times are displayed in Central Standard Time. Red submission date times indicate late work.

Date	Time	Answer	Hints	Feedback
1 Sep 25, 2024	1:17 PM	$\theta = 4.1687189$ $\theta = 4.169$ rad		

Problem 5: Solve the subsequent question concerning vectors.

From the given list choose all that are examples of vectors.

Grade = 100%

Correct Answer	Student Final Submission	Feedback
Force., Acceleration. , Velocity.	Force., Acceleration. , Velocity.	

Grade Summary

Deduction for Final Submission **0%**
Deductions for Incorrect Submissions, Hints and Feedback **[?] 0%**

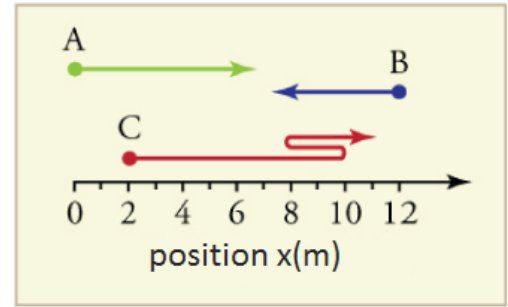
Student Grade = 100 - 0 - 0 = 100%

Submission History

All Date times are displayed in Central Standard Time. Red submission date times indicate late work.

Date	Time	Answer	Hints	Feedback
1 Sep 25, 2024	1:44 PM	Force., Acceleration. , Velocity.		

Problem 6: The figure shows three paths taken along the horizontal axis. Each path begins at the circular dot beneath the letter denoting the path's name and ends at the very tip of the arrow. In your calculations, round to the nearest integer.



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Part (a) What is the distance traveled, in meters, for path C?

Grade = 0%

Correct Answer	Student Final Submission	Feedback
$d = 13.00$ m	$d = 15.00$ m	
Grade Summary		
Deduction for Final Submission	100%	
Deductions for Incorrect Submissions, Hints and Feedback [?]	0%	
Student Grade = 100 - 100 - 0 = 0%		

Submission History

All Date times are displayed in Central Standard Time. Red submission date times indicate late work.

Date	Time	Answer	Hints	Feedback
1 Sep 25, 2024	1:19 PM	$d = 15.00$ m		

Part (b) What is the magnitude of the displacement from start to finish, in meters, for path C?

Grade = 80%

Correct Answer	Student Final Submission	Feedback
$ \Delta x = 9.000$ m	$ \Delta x = 13.00$ m	This is total distance traveled. What is displacement?
Grade Summary		
Deduction for Final Submission	20%	
Deductions for Incorrect Submissions, Hints and Feedback [?]	0%	
Student Grade = 100 - 20 - 0 = 80%		

Submission History

All Date times are displayed in Central Standard Time. Red submission date times indicate late work.

Date	Time	Answer	Hints	Feedback
1 Sep 25, 2024	1:21 PM	$ \Delta x = 13.00$ m		

Part (c) What is the displacement from start to finish, in meters, for path C?

Grade = 100%

Correct Answer	Student Final Submission	Feedback
$\Delta x = 9.000$ m	$\Delta x = 9.000$ m	
Grade Summary		
Deduction for Final Submission	0%	
Deductions for Incorrect Submissions, Hints and Feedback [?]	0%	
Student Grade = 100 - 0 - 0 = 100%		

Submission History

All Date times are displayed in Central Standard Time. Red submission date times indicate late work.

	Date	Time	Answer	Hints	Feedback
1	Sep 25, 2024	1:21 PM	$\Delta x = 9.000 \text{ m}$		

Problem 7: A fireworks shell has a constant acceleration from rest to a velocity of **61** m/s over a distance of **9.5** m.

Part (a) How long, in seconds, does the acceleration last?

Grade = 75%

Correct Answer	Student Final Submission	Feedback
$t = 0.3115 \text{ s}$	$t = 0.1557 \text{ s}$	The shell does not move with constant velocity, or you have lost somewhere the factor of 2.

Grade Summary

Deduction for Final Submission	25%
Deductions for Incorrect Submissions, Hints and Feedback [?]	0%
Student Grade = 100 - 25 - 0 = 75%	

Submission History

All Date times are displayed in Central Standard Time. Red submission date times indicate late work.

	Date	Time	Answer	Hints	Feedback
1	Sep 25, 2024	1:27 PM	$t = 0.1557 \text{ s}$		

Part (b) Calculate the acceleration, in meters per second squared.

Grade = 0%

Correct Answer	Student Final Submission	Feedback
$a = 195.8 \text{ m/s}^2$	$a = 3721 \text{ m/s}^2$	

Grade Summary

Deduction for Final Submission	100%
Deductions for Incorrect Submissions, Hints and Feedback [?]	0%
Student Grade = 100 - 100 - 0 = 0%	

Submission History

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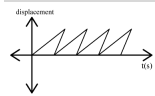
	Date	Time	Answer	Hints	Feedback
1	Sep 25, 2024	1:48 PM	$a = 3721 \text{ m/s}^2$		

Problem 8: Please answer the following questions about displacement vs. time graphs.

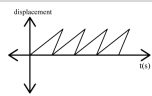
Part (a) Which of the following graphs represents an impossible motion?

Grade = 100%

Correct Answer



Student Final Submission



Feedback

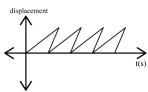
Grade Summary

Deduction for Final Submission **0%**
 Deductions for Incorrect Submissions, Hints and Feedback **[?] 0%**

Student Grade = 100 - 0 - 0 = 100%

Submission History

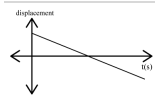
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Date	Time	Answer	Hints	Feedback
1 Sep 25, 2024	1:29 PM			

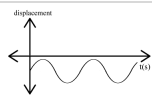
Part (b) Which graph has only negative velocity?

Grade = 0%

Correct Answer



Student Final Submission



Feedback

Are there portions of this graph with a positive slope therefore a positive velocity?

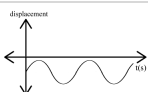
Grade Summary

Deduction for Final Submission **100%**
 Deductions for Incorrect Submissions, Hints and Feedback **[?] 0%**

Student Grade = 100 - 100 - 0 = 0%

Submission History

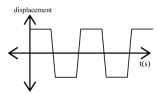
All Date times are displayed in Central Standard Time. Red submission date times indicate late work.

Date	Time	Answer	Hints	Feedback
1 Sep 25, 2024	1:49 PM			

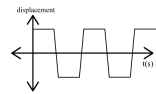
Part (c) Which graph represents an object being stationary for periods of time?

Grade = 100%

Correct Answer



Student Final Submission



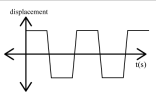
Feedback

Grade Summary

Deduction for Final Submission **0%**
Deductions for Incorrect Submissions, Hints and Feedback **[?] 0%**
Student Grade = 100 - 0 - 0 = 100%

Submission History

All Date times are displayed in Central Standard Time. Red submission date times indicate late work.

Date	Time	Answer	Hints	Feedback
1 Sep 25, 2024	1:49 PM			

Problem 9: A point on the second hand of a clock has a centripetal acceleration of 0.079 cm/s^2 .

How far is this point, in cm, from the rotational axis?

Grade = 0%

Correct Answer

$r = 7.204$

Student Final Submission

$r = 5.320$

Feedback

Grade Summary

Deduction for Final Submission **100%**
Deductions for Incorrect Submissions, Hints and Feedback **[?] 0%**
Student Grade = 100 - 100 - 0 = 0%

Submission History

All Date times are displayed in Central Standard Time. Red submission date times indicate late work.

Date	Time	Answer	Hints	Feedback
1 Sep 25, 2024	1:50 PM	$r = 5.320$		

Problem 10: A bullet is shot horizontally over level ground. The initial height is 1.83 m , and its initial speed is 202 m/s .

Part (a) How much time, in seconds, elapses before the bullet hits the ground?

Grade = 0%

Correct Answer	Student Final Submission	Feedback
$t = 0.6111$	$t = 0.009057$ $t = 0.009057$	

Grade Summary

Deduction for Final Submission **100%**

Deductions for Incorrect Submissions, Hints and Feedback [?] **0%**

Student Grade = 100 - 100 - 0 = 0%

Submission History

All Date times are displayed in Central Standard Time. Red submission date times indicate late work.

Date	Time	Answer	Hints	Feedback
1 Sep 25, 2024	1:43 PM	$t = 0.009057$ $t = 0.009057$		

Part (b) How far does the bullet travel horizontally, in meters, before hitting the ground?

Grade = 0%

Correct Answer	Student Final Submission	Feedback
$x = 123.4$	$x = 4.5321$ $x = 4.532$	

Grade Summary

Deduction for Final Submission **100%**

Deductions for Incorrect Submissions, Hints and Feedback [?] **0%**

Student Grade = 100 - 100 - 0 = 0%

Submission History

All Date times are displayed in Central Standard Time. Red submission date times indicate late work.

Date	Time	Answer	Hints	Feedback
1 Sep 25, 2024	1:51 PM	$x = 4.5321$ $x = 4.532$		