

AP Physics- Summer Assignment: Will be a test on the 1st day of class in August / September

Solve

1. 293

×198

Identify the Roots (if any)

6. $y = 4x^2 + 4x - 15$

Find the Unknowns

2. $17x - 6 = 45$

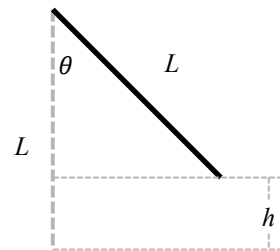
3. $\frac{4}{7}y + \frac{2}{3} = \frac{9}{16}$

4. $2x - y = -4$

$x + 2y = 3$

Derive an expression for h in terms of L and θ

7.



Find the 1st derivative with respect to t

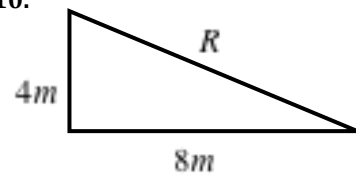
8. $y = y_0 + v_0t + \frac{1}{2}at^2$

Find the 2nd derivative with respect to t

9. $y = 7t^3 + 3t^{-2} - 15$

Estimate R to 0.1

10.



Simplify

5. $\frac{x^2 + 5x + 6}{x^2 - x - 20} \div \frac{x^2 + x - 2}{x^2 + 3x - 4}$

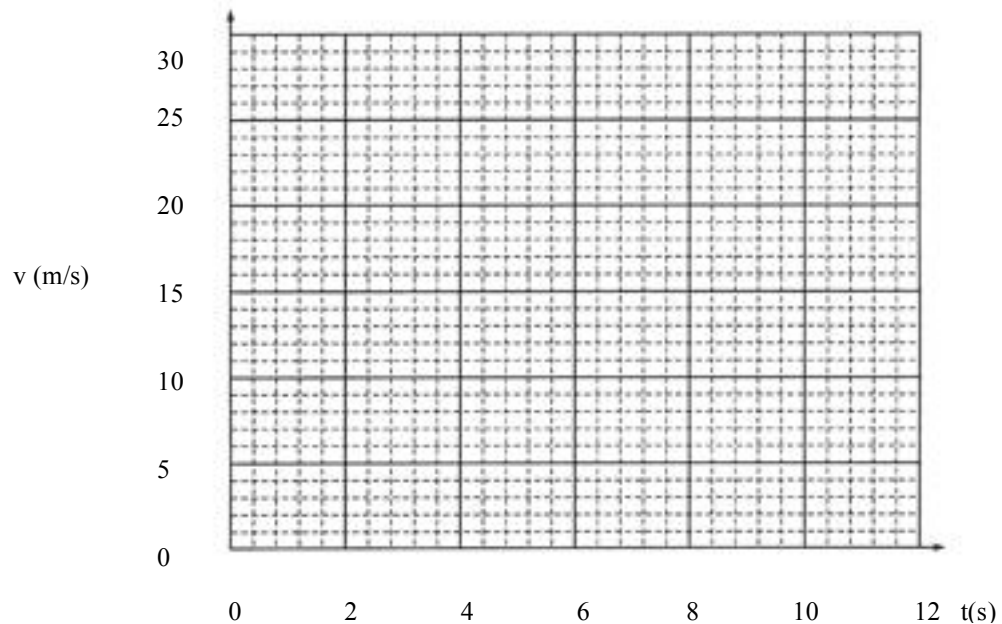
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A car accelerates with unknown constant acceleration a when it starts from an initial speed v_0 .

a) Develop a general equation for the car's velocity at any time t in terms of the givens.

b) The car's motion is timed for several trials and the collected data is listed below. Plot the car's motion with an appropriate scale and axis labels:

v (m/s)	6.8	12.3	15.1	21.3	26.9
t (s)	2	4	6	8	10



c) Develop the numerical equation of the car's motion from values found from your graph.

d) Your lab partner wants to determine how far the car moved for each trial. Explain how you would do this from your graph in (b).

e) Sketch a displacement vs time graph for the car.