

marius

by Marius Oancea

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DECEMBER 2021

17 Friday

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- 1 A) KELVIN (K)
B) CANDELA (cd)
C) LUMEN (lm)
D) METER (m)
E) ~~PER~~ SECOND (s) HOUR (h)

$$2 \text{ PRESSURE} = \frac{\text{FORCE}}{\text{AREA}} = \frac{ML}{AREA}$$

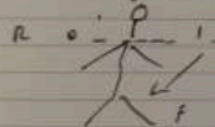
$$\text{FORCE} = \text{ACCELERATION} \times \text{MASS}$$

$$\text{ACCELERATION} = \frac{\text{VELOCITY}}{\text{TIME}} \quad \text{ACCELERATION} = \frac{M}{s^2}$$

$$\text{FORCE} = \text{MASS} \times \text{ACCELERATION} = 10 \cdot \frac{m}{s^2} = 10 \frac{m}{s^2}$$

$$\text{PRESSURE} = \frac{10 \frac{m}{s^2}}{1 \text{ m}^2} = 10 \frac{m}{s^2}$$

$$3. a) W = mg = 2 \text{ kg} \times 9.81 \text{ m/s}^2 = 19.62 \text{ N}$$



$$b) F = W \sin 45^\circ \quad F = 2 \text{ kg} \times 9.81 \text{ m/s}^2 \times \sin 45^\circ$$

$$F = 19.62 \times 0.7071 = 13.86$$

c) ~~REACTION~~ ~~REACTION~~ ARE EQUAL FORCES

$$d) \text{NORMAL REACTION} = R$$

$$R = W \cos 45^\circ$$

$$R = 2 \text{ kg} \times 9.81 \text{ m/s}^2 \times \cos 45^\circ$$

$$R = 19.62 \times 0.7071 = 13.86$$

December 2021

M	8	13	20	27
T	9	14	21	28
W	10	15	22	29
T	11	16	23	30
F	12	17	24	31
S	18	25		
S	19	26		

$$4) i) x^2 - 5x + 6 = (x-2)(x-3) = 0$$

$$x-2=0 \quad x-3=0$$

$$x^2 - 5x + 6 = 0 \quad x=2 \quad x=3$$

$$x+7x+5=0$$

$$x+6=0 \quad x+1=0 \quad x=-6 \quad x=-1$$

$$iii) x^2 + 10x = -15 \quad x^2 + 10x + 15 = 0$$

$$x+5=0 \quad x+5=0 \quad x=-5$$

$$iv) x^2 - 2x - 15 = 0$$

$$x^2 - 2x - 15 = (x-5)(x+3) = 0$$

$$x-5=0 \quad x+3=0$$

$$x=5 \quad x=-3$$

$$v) 2x^2 + 5x + 1 = 0$$

$$x^2 + 2x + 1 = 0 \quad x+1=0 \quad x=-1$$

$$5) i) x^2 - 4x - 1 = 0$$

$$a=1 \quad b=-4 \quad c=-1$$

$$x = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(1)(-1)}}{2(1)}$$

$$x = \frac{4 \pm \sqrt{16+4}}{2} \quad x = \frac{4 \pm \sqrt{20}}{2} \quad x = \frac{4 \pm 2\sqrt{5}}{2}$$

$$x = 2 - \sqrt{5} \approx -0.24$$

$$x = 2 + \sqrt{5} \approx 4.24$$

$$x = \frac{-3 \pm \sqrt{9+8}}{4}$$

$$x = \frac{-3 \pm \sqrt{17}}{4}$$

$$x = \frac{-3 \pm \sqrt{17}}{4} \approx 0.14$$

$$x = \frac{-3 - \sqrt{17}}{4} \approx -1.78$$

$$6) i) \frac{3(x-1)}{2} = \frac{x+2}{4} \quad 2 \cdot 3(x-1) = x+2 \quad 6(x-1) = x+2$$

$$6x - 6 = x + 2 \quad 6x - x = 2 + 6 \quad 5x = 8 \quad x = \frac{8}{5}$$

$$ii) 2x + 5y = 7 \quad 6x + 15y = 21 \quad (6x + 15y) - (2x + 4y)$$

$$4x + 11y = 14 \quad 4x + 15y = 21 \quad 4x + 15y = 21 \quad 4x + 15y = 21 \quad 4x + 15y = 21 \quad 4x + 15y = 21$$

$$7) a) 9$$

$$b) 12$$

$$c) 9$$

January 2022

3	10	17	24	31
4	11	18	25	
5	12	19	26	
6	13	20	27	
7	14	21	28	
8	15	22	29	
9	16	23	30	

Thank you very much

Asasadasdasdfg sadfgs a sa dds gas ga gds gsd gsd gdsa gds gsd asd gds sd gs gs gsd gsda ga gds gsd d sdgdsdgsdgsdg sdg sdg

FINAL GRADE	GENERAL COMMENTS
72/100	Q1 BASE UNITS
	[5MARKS]
	All correct [5 marks]
	Q2 DERIVED UNITS
	[5 MARKS]
	Almost, should be $\text{kg m}^{-1} \text{s}^{-2}$ [4 marks]
	Q3 EQUILIBRIUM OF AN OBJECT ON AN INCLINED PLANE
	[11 MARKS]
	Units required, i.e N and reasons why the forces are equal
	[8 marks]
	Q4 SOLVING QUADRATIC EQUATIONS BY FACTORISING
	[15 MARKS]
	need to solve the first one not just facorise. show workings for second one,x=-5 twice for the third one, wrongly factorised (v)
	[10 marks]

Q5 SOLUTION OF QUADRATIC EQUATIONS BY FORMULA

[10 MARKS]

All correct [10 marks]

Q6 SIMULTANEOUS LINEAR EQUATIONS

[10 MARKS]

All correct [10 marks]

Q7 SIMPLE ELECTRICAL CIRCUIT

[9 MARKS]

No sensible attempt made

[0 marks]

total =47/65, 72 %

Good effort well done.

