H Physics Quantity, Symbol, Unit, Unit Symbol

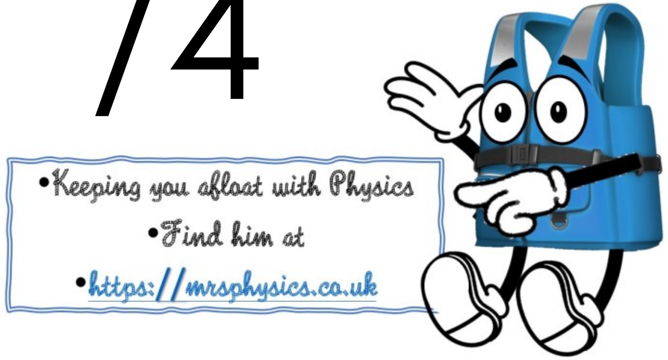
REVISION GAME

FOR EACH EQUATION NOTE THE QUANTITY HIGHLIGHTED, STATE ITS UNIT AND UNIT SYMBOL AND WHETHER IT IS A SCALAR OR VECTOR QUANTITY. UP TO 4 MARKS PER QUESTION, KEEP YOUR SCORE. HOW MANY CARDS CAN YOU COMPLETE BEFORE MAKING A MISTAKE OR FORGETTING ONE?

‘F’ as in $F = ma$

- force
- Newton
- N
- vector

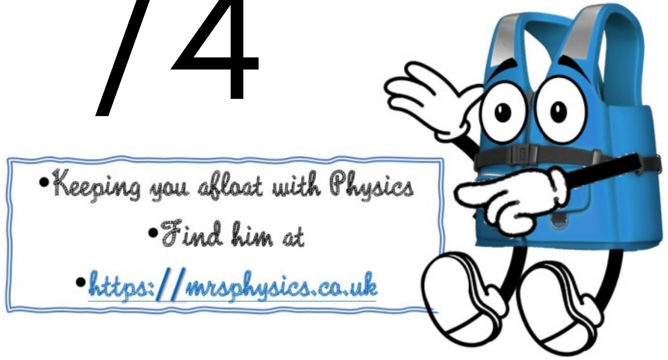
/4



‘d’ as in $v = \frac{d}{t}$

- distance
- metre
- m
- scalar

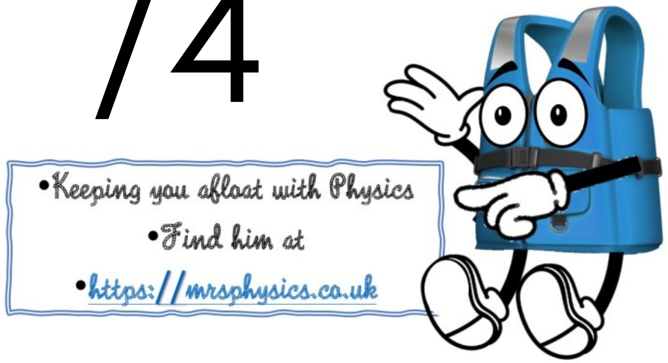
/4



's' as in $v = \frac{s}{t}$

- displacement
- metre
- m
- vector

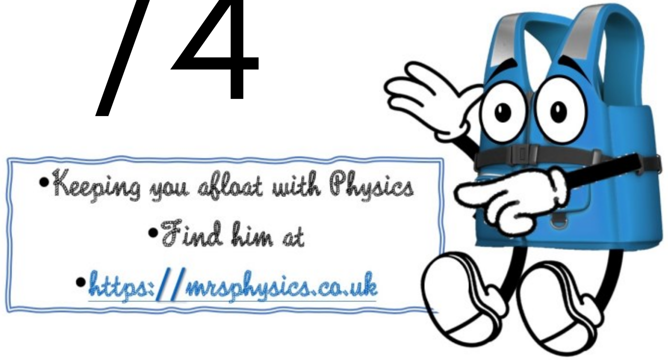
/4



‘s’ as in $s = ut + \frac{1}{2} at^2$

- displacement
- metre
- m
- vector

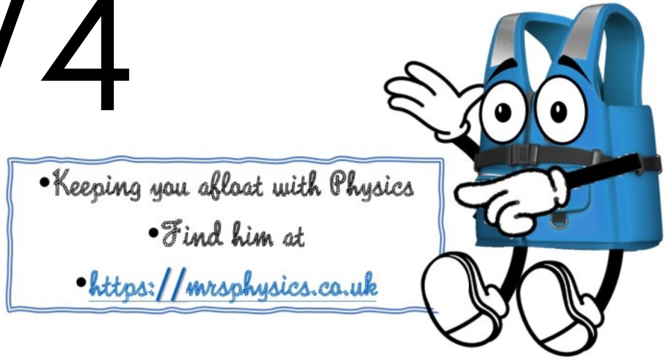
/4



‘ u’ as in $v = u + at$

- Initial velocity
- metres per second
- ms^{-1} or m/s
- vector

/4



‘a’ as in $a = \frac{v-u}{t}$

- Acceleration
- metres per second squared
- ms^{-2} or m/s^2
- vector

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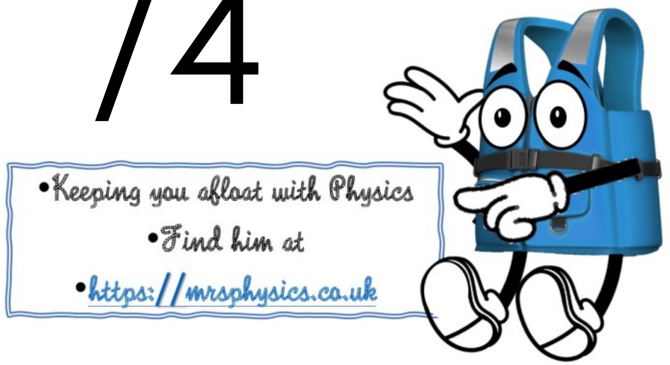
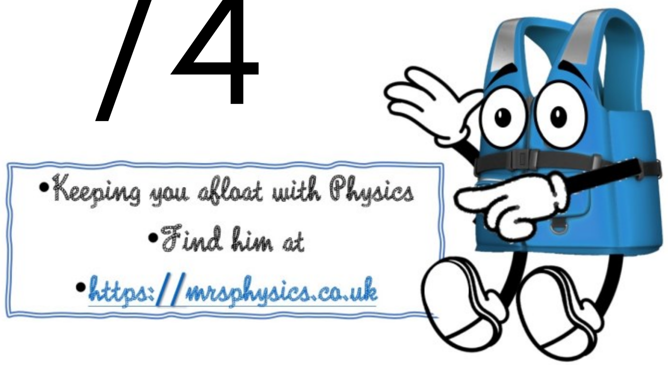


‘g’ as in $W = mg$

- Acceleration due to gravity/ gravitational field strength
- metres per second squared/ newtons per kilogram
- ms^{-2} or m/s^2 or $N\ kg^{-1}$
- vector

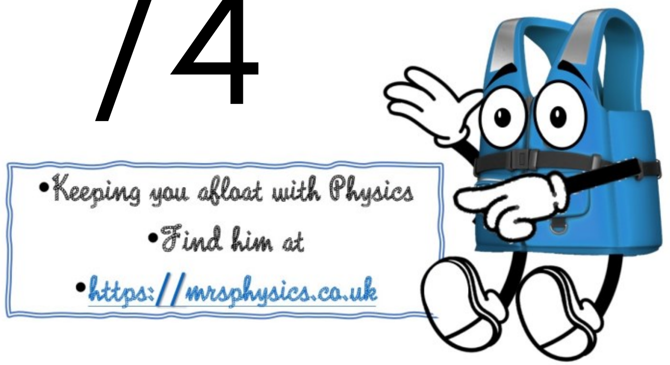
/4



'W' as in $W = mg$

- Weight
- Newton
- N
- vector

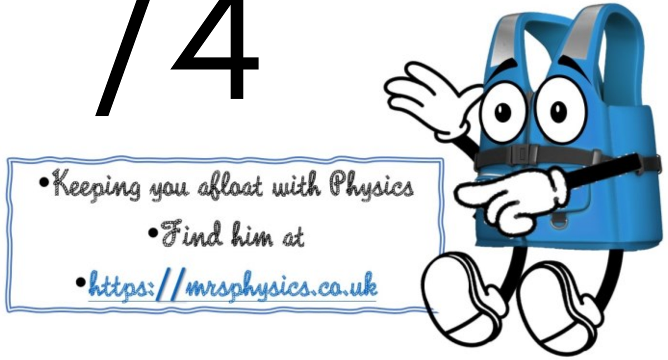
/4



'E_w' or W as in $E_w = Fd$

- Work done
- Joule
- J (must look like a capital)
- scalar

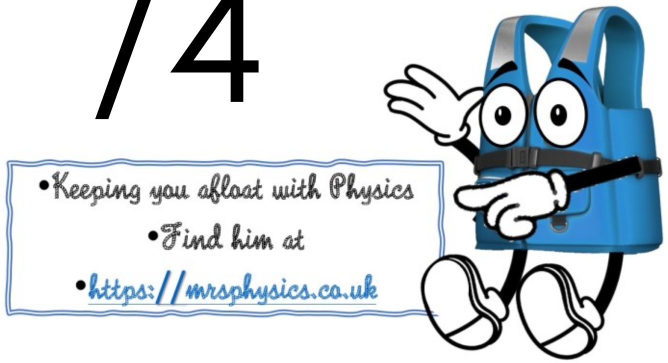
/4



‘m’ as in $F = ma$

- mass
- kilogram
- kg
- scalar

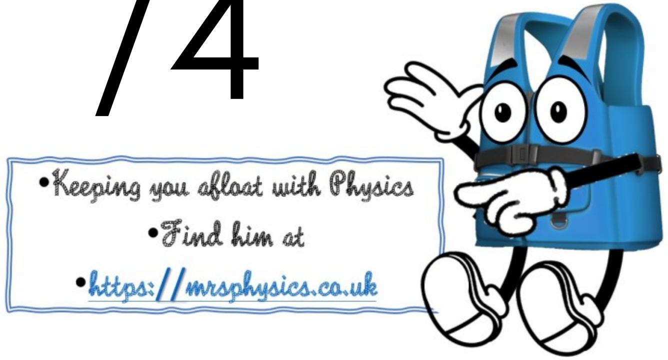
/4



‘h’ as in $E_p = mgh$

- height
- metre
- m
- scalar

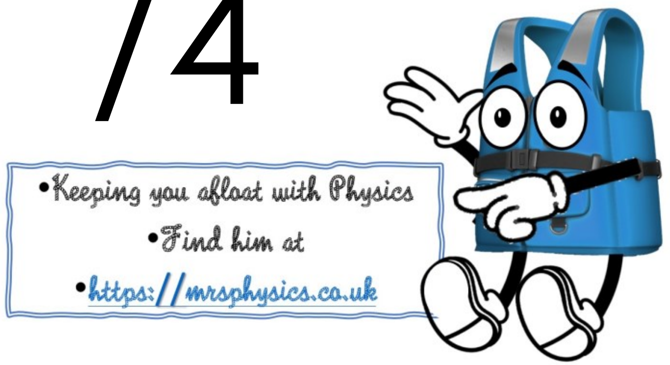
/4



‘E_p’ as in $E_p = mgh$

- (gravitational) potential Energy
- Joule
- J (must look like a capital)
- scalar

/4



‘E_k’ as in $E_k = \frac{1}{2}mv^2$

- Kinetic Energy
- Joule
- J (must look like a capital)
- scalar

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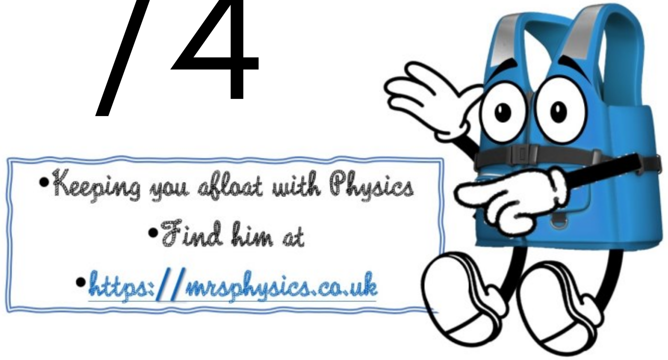

'P' as in $P = \frac{E}{t}$

- Power
- Watt (yes Watt is the unit of power)
- W
- scalar

/4

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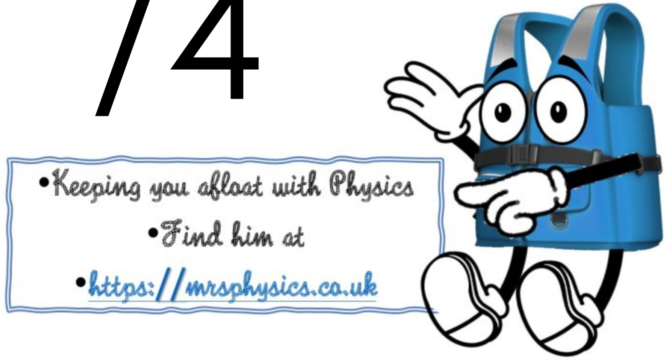
' F ' as in $F = G\frac{m_1 m_2}{r^2}$

- Gravitational force
- Newton
- N or $kgms^{-2}$
- vector

/4



‘ G ’ as in $F = G\frac{m_1 m_2}{r^2}$

- Universal constant of Gravitation
- cubic metres per kilogram per second squared!
- $m^3kg^{-1}s^{-2}$
- Scalar
- equal to
- $6.67 \times 10^{-11}\ m^3kg^{-1}s^{-2}$

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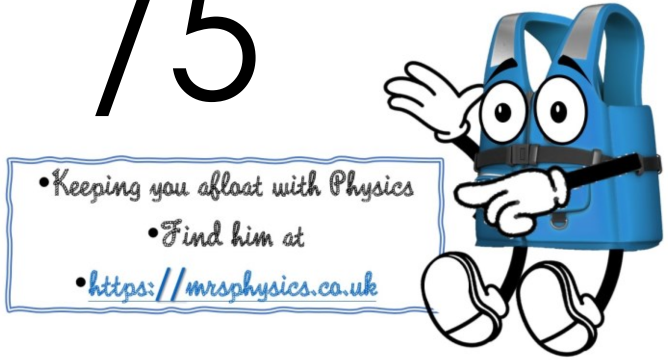
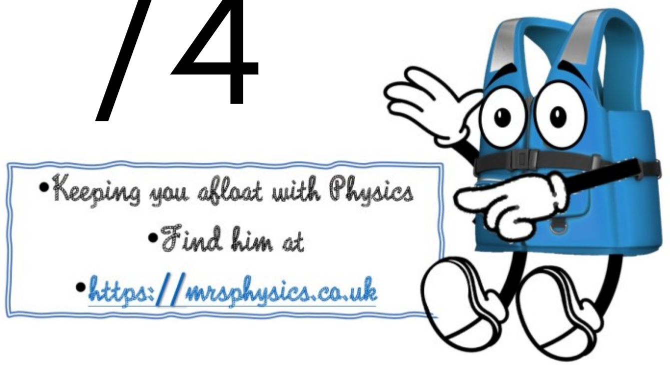


'W' as in $W = QV$

- Work done
- Joule
- J (must look like a capital)
- scalar

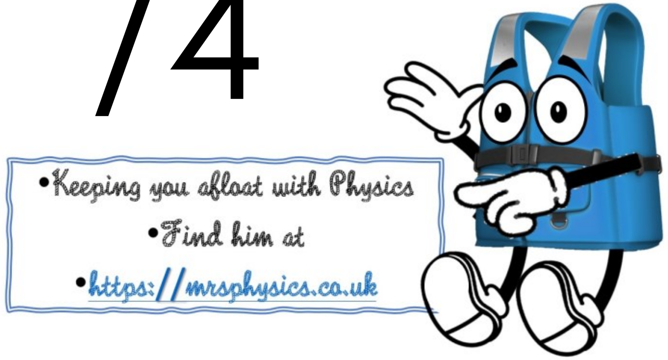
/4



‘ Δp ’ as in $\Delta p = Ft$

- Change in momentum or impulse
- Kilogram metre per second or Newton second
- $Kgms^{-1}$ or Ns
- vector

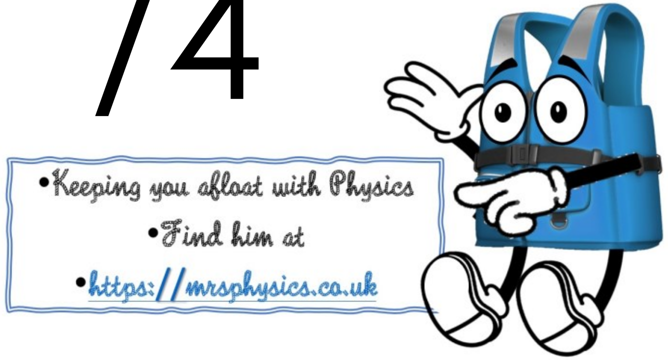
/4



‘ p ’ as in $p = mv$

- Momentum
- Kilogram metre per second or Newton second
- $Kgms^{-1}$ or Ns
- vector

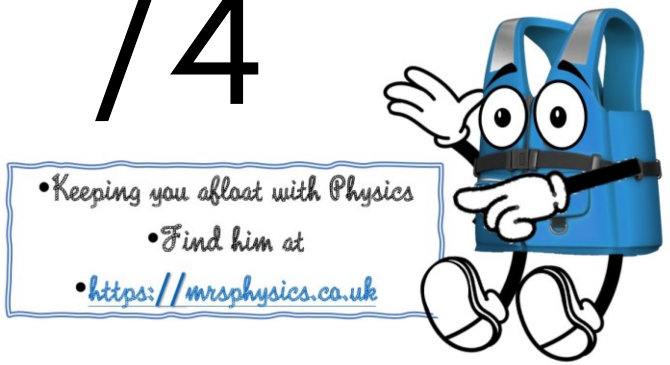
/4



‘ m ’ as in $p = mv$

- mass
- Kilogram
- Kg
- scalar

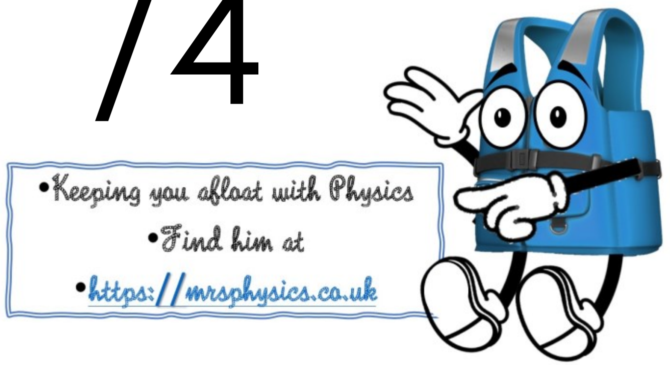
/4



' Ft ' as in $Ft = mv - mu$

- Impulse or change in momentum
- Newton second or kilogram metre per second
- Ns or $kgms^{-1}$
- vector

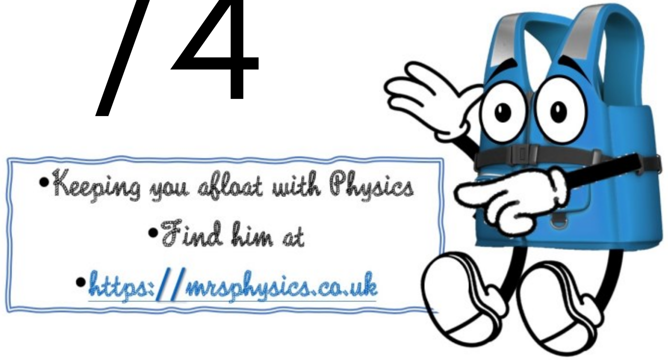
/4



‘t'’ as in $t' = \dfrac{t}{\sqrt{1-\left(\frac{v}{c}\right)^2}}$

- Relativistic /Dilated time
- Units of time
- s,d, h, yr
- scalar

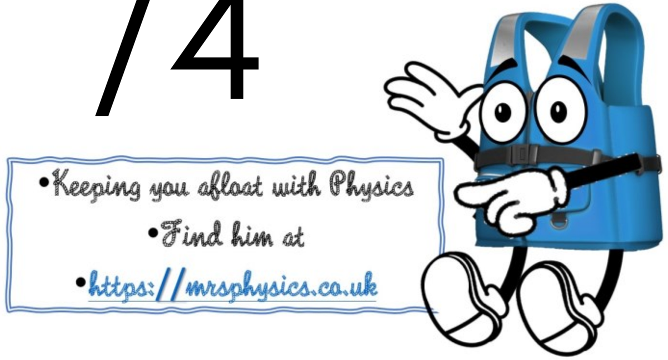
/4



' t' ' as in $t' = \frac{t}{\sqrt{1-\left(\frac{v}{c}\right)^2}}$

- dilated time
- second (or years/days etc)
- s (yr/d/h)
- scalar

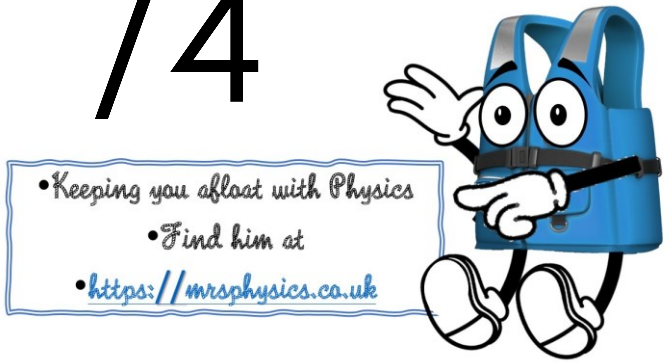
/4



‘t’ as in $t' = \frac{t}{\sqrt{1-\left(\frac{v}{c}\right)^2}}$

- Time in the same reference frame as the clock???
- Units of time
- s,d, h, yr
- scalar

/4



‘l'’ as in $l' = l\sqrt{1-\left(\frac{v}{c}\right)^2}$

- Relativistic /contracted length
- Units of length, metres
- m
- scalar

/4

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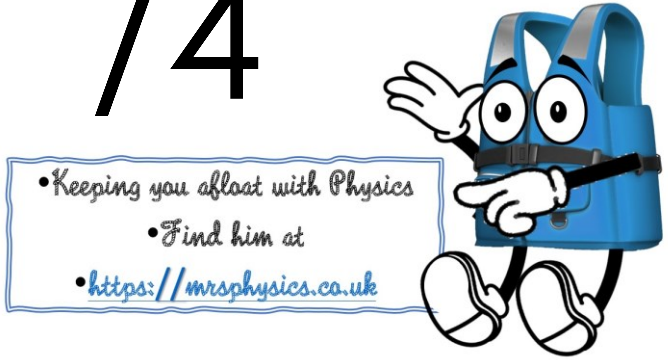
‘l’ as in $l' = l\sqrt{1-\left(\frac{v}{c}\right)^2}$

- original length
- Units of length, metres
- m
- scalar

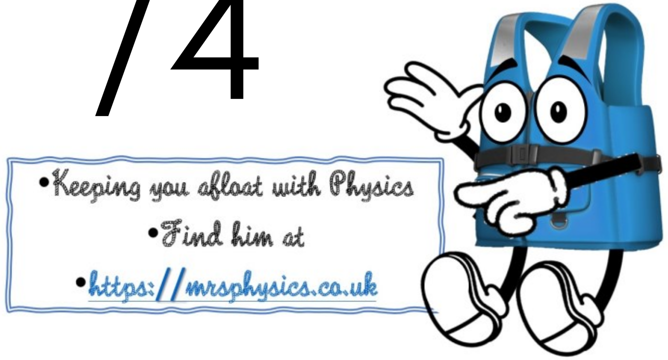
/4



‘f_s’ as in $f_o = f_s\left(\frac{v}{v \pm v_s}\right)$

- Frequency of the source
- Hertz
- Hz
- scalar

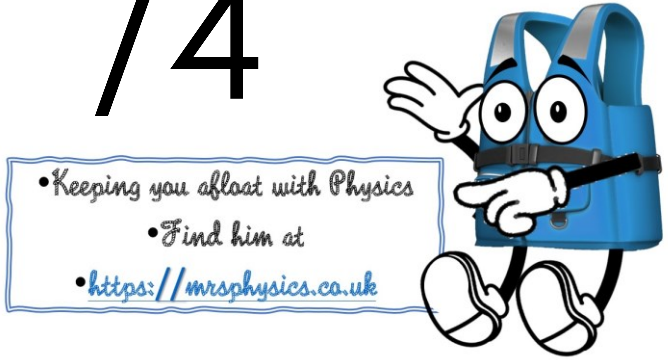
/4



‘v_s’ as in $f_o = f_s\left(\frac{v}{v \pm v_s}\right)$

- velocity of the source
- Metres per second
- ms^{-1} or m/s
- vector

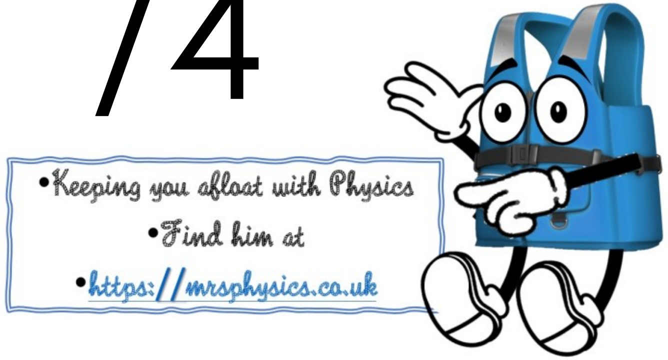
/4



‘f_o’ as in $f_o = f_s\left(\frac{v}{v \pm v_s}\right)$

- Observed frequency
- Hertz
- Hz
- scalar

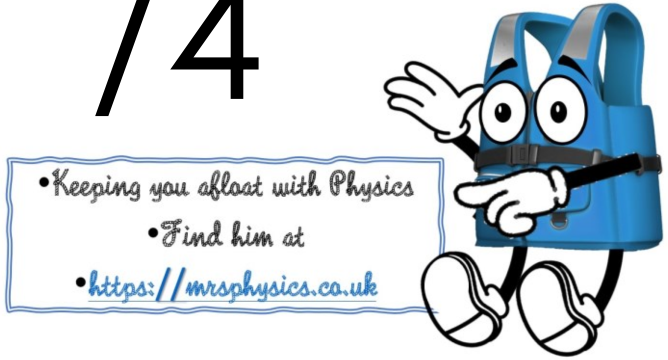
/4



‘c’ as in $E = mc^2$

- Speed of light
- metres per second
- ms^{-1} or m/s
- This is equal to
- $3.00 \times 10^{8}\ ms^{-1}$

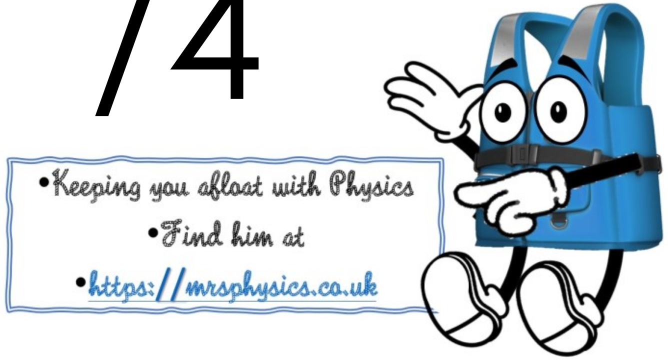
/4



‘ l' ’ as in $l' = l\sqrt{1-\left(\frac{v}{c}\right)^2}$

- contracted length
- metre
- m
- scalar

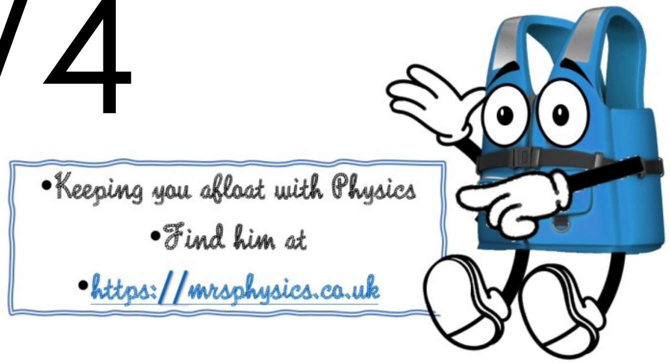
/4



‘$\lambda_{observed}$’ as in $z = \frac{\lambda_{observed} - \lambda_{rest}}{\lambda_{rest}}$

- **Observed wavelength** (the wavelength arriving at us after passing through space)
- **metre**
- **m**
- **scalar**

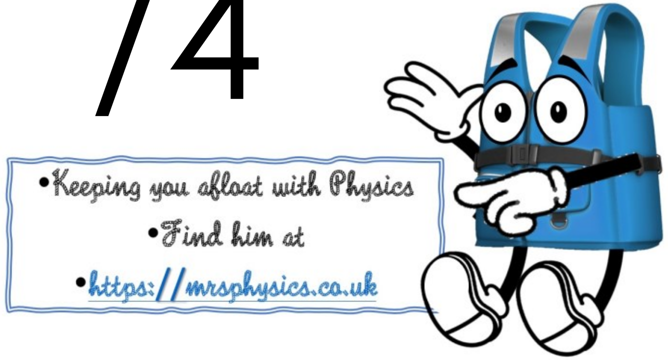
/4



'$\lambda_{observed}$' as in $z = \frac{\lambda_{observed} - \lambda_{rest}}{\lambda_{rest}}$

- Observed wavelength
- metre
- m
- scalar

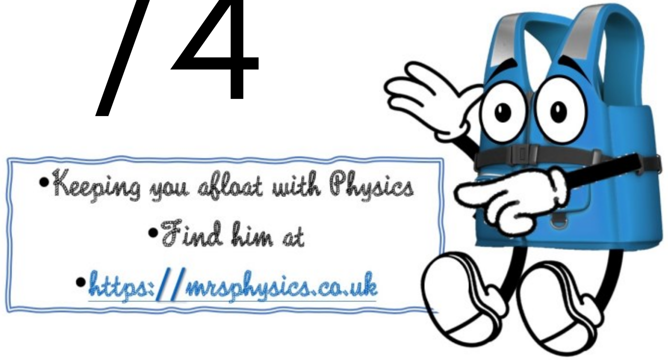
/4



‘v’ as in $z = \frac{v}{c}$

- Recessional velocity
- metres per second
- ms^{-1} or m/s
- vector

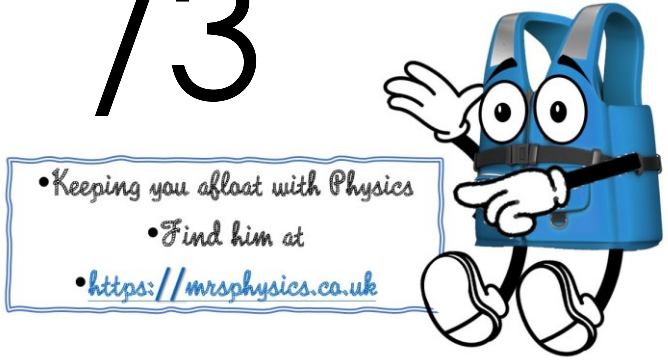
/4



‘z’ as in $z = \frac{v}{c}$ or $z = \frac{\lambda_{observed} - \lambda_{rest}}{\lambda_{rest}}$

- redshift
- No unit
- scalar

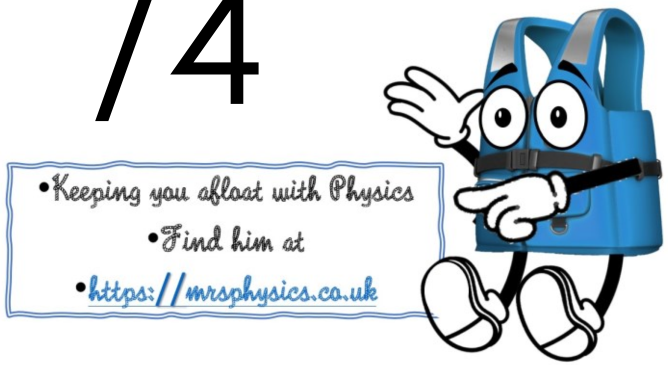
/3



'λ_{rest}' as in $z = \frac{\lambda_{observed} - \lambda_{rest}}{\lambda_{rest}}$

- rest wavelength
- metre
- m
- scalar

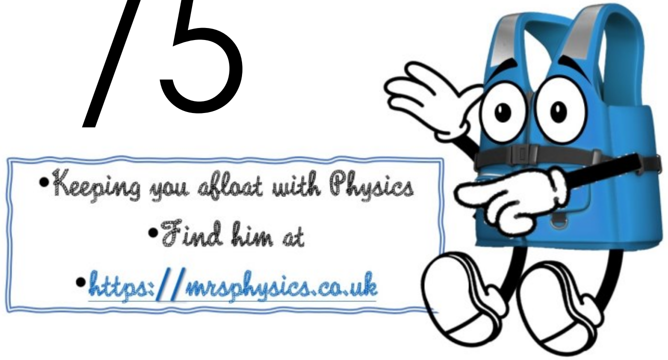
/4



'H$_o$' as in $v = H_o d$

- Hubble's constant
- Per Second or seconds to the minus 1
- s^{-1}
- Scalar. The value is equal to
- $2.3 \times 10^{-18}\ s^{-1}$

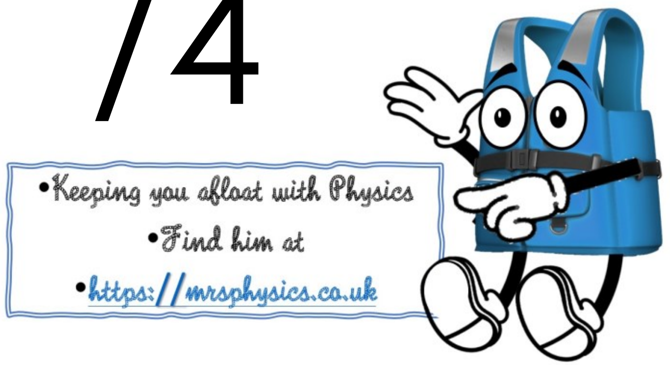
/5



‘d’ as in $v = H_o d$

- Distance from galaxy to the observer
- metre
- m
- Scalar.

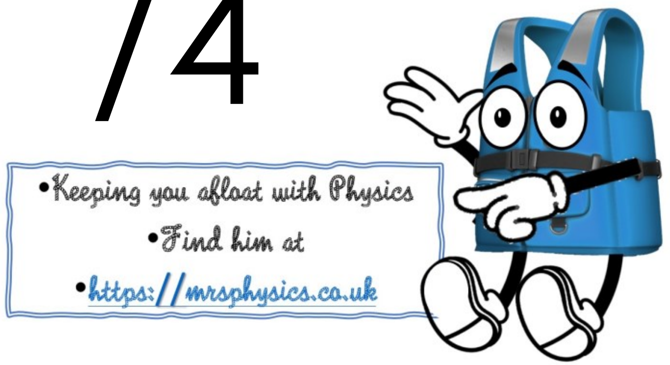
/4



‘f_o’ as in $f_o = f_s \left(\frac{v}{v \pm v_s}\right)$

- Observed frequency
- Hertz
- Hz
- scalar

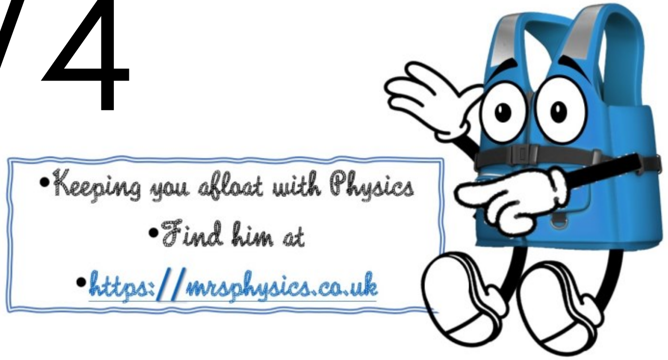
/4



' Δv' as in $a = \frac{\Delta v}{t}$

- Change in velocity
- Metres per second
- ms^{-1} or m/s
- vector

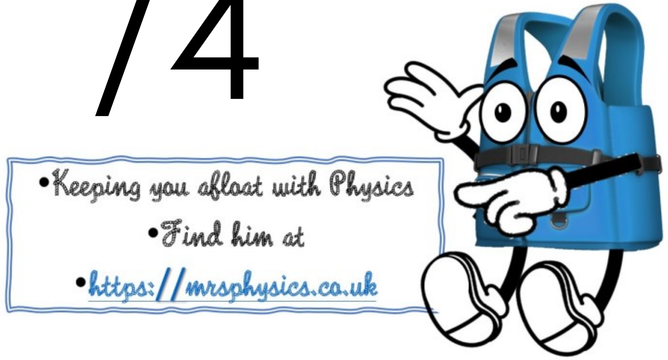
/4



'A' as in $I = \frac{P}{A}$

- Area
- Square metres
- m^2 or m^2
- scalar

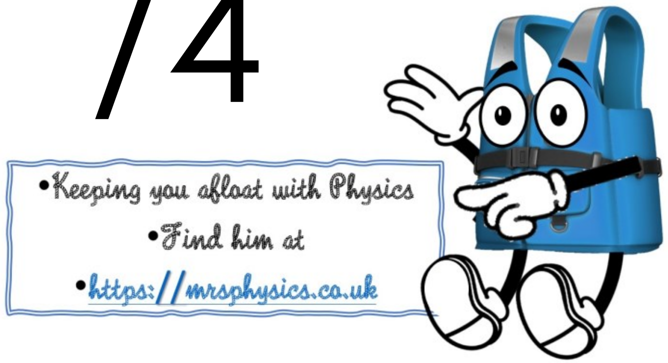
/4



'I' as in $I = \frac{P}{A}$

- irradiance
- Watts per square metre
- Wm^{-2} or W/m^2
- scalar

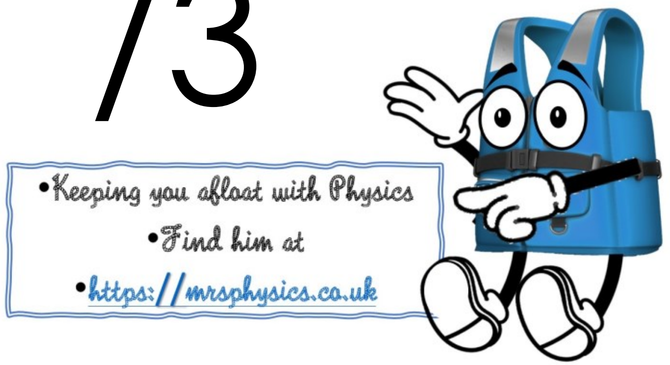
/4



' ΔR ' as in $\Delta R = \frac{R_{max} - R_{min}}{n}$

- Approximate random uncertainty
- The units of the quantity measured
- Scalar or vector

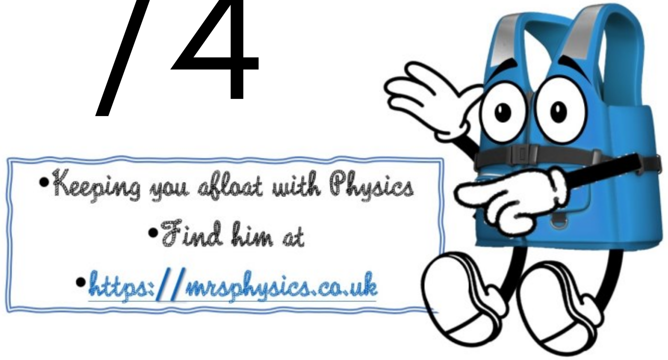
/3



'f' as in $T = \frac{1}{f}$

- frequency
- Hertz
- Hz
- scalar

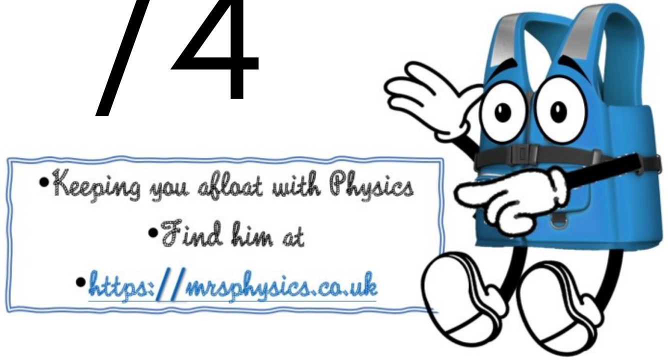
/4



'T' as in $T = \frac{1}{f}$

- period
- second
- s
- scalar

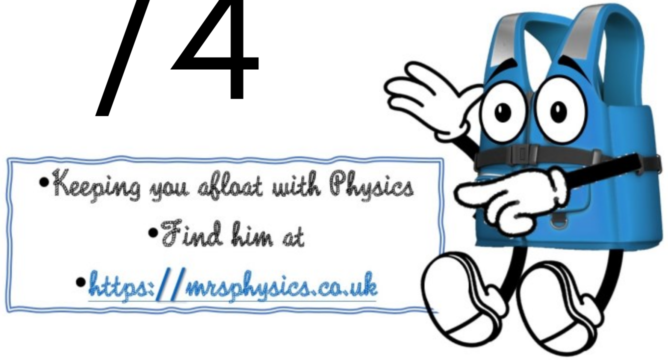
/4



‘f_s’ as in $f_o = f_s\left(\frac{v}{v \pm v_s}\right)$

- Frequency of source
- Hertz
- Hz
- scalar

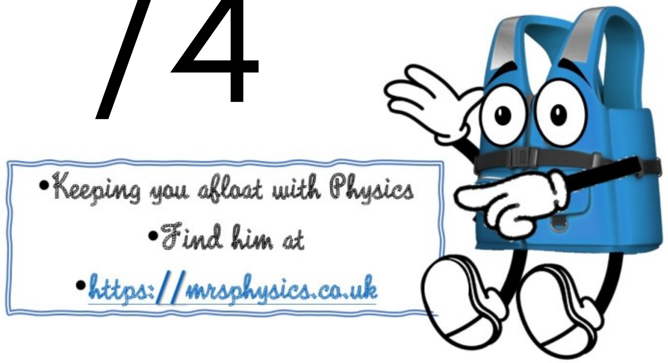
/4



‘E_2’ as in $E_2 - E_1 = hf$

- Energy level
- Joule
- J (must look like a capital)
- scalar

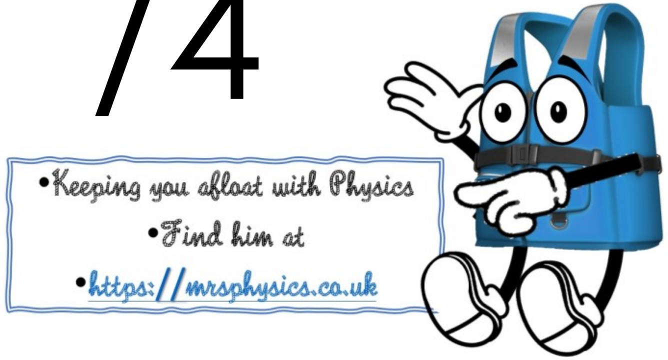
/4



‘E’ as in $E = hf$

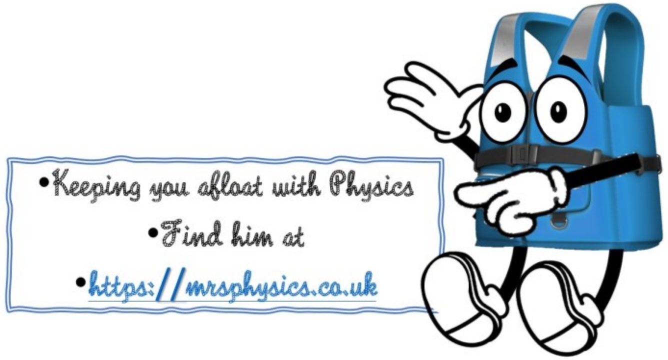
- Energy of the photon
- Joule
- J (must look like a capital)
- scalar

/4



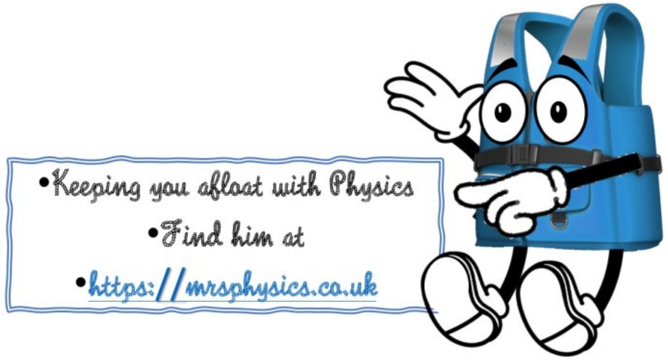
‘hf_o’ as in $E_k = hf - hf_o$

- Work function
- Joule
- J
- scalar



'f$_o$' as in $E_k = hf - hf_o$

- Threshold frequency
- Hertz
- Hz
- scalar



‘h’ as in $E = hf$

- Planck’s constant
- Joule second
- Js
- Scalar
- Equal to
- 6.63×10^{-34} Js

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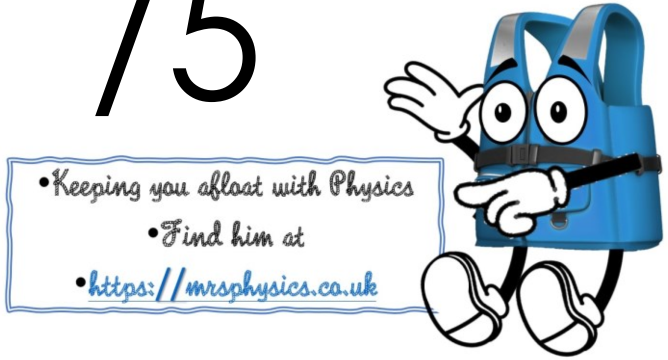
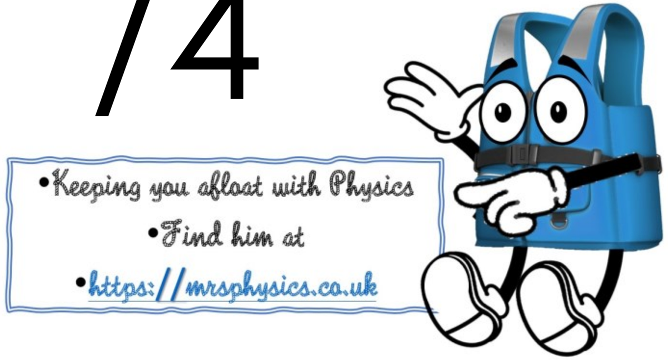


' θ' as in $d\ sin\theta = m\ \lambda$

- Angle
- degrees
- °
- scalar

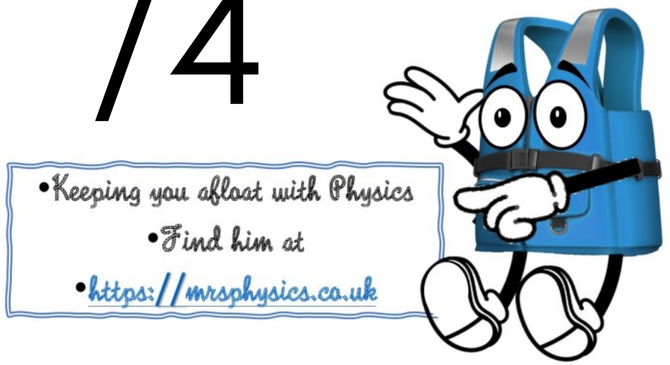
/4



‘ d’ as in $d \ sin\theta = m \ \lambda$

- Slit separation
- metre
- m
- scalar

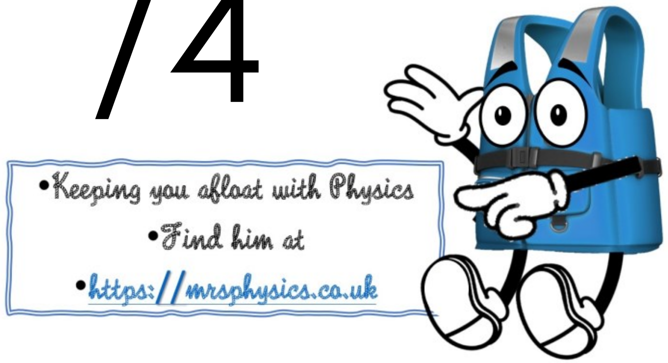
/4



‘d_1’ as in $I_1 d_1^2 = I_2 d_2^2$

- Initial distance from the source
- metre
- m
- scalar

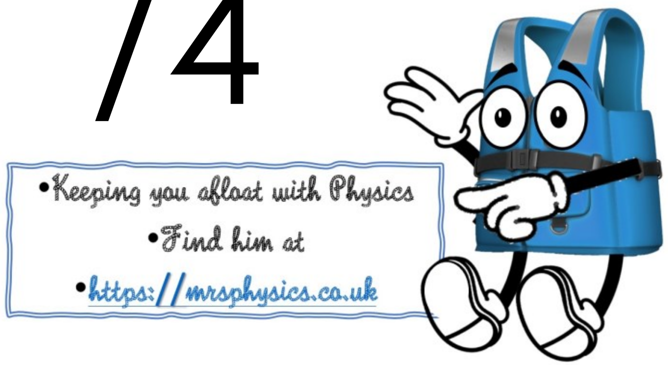
/4



‘k’ as in $I = \frac{k}{d^2}$

- Constant of proportionality
- Watt
- W
- scalar

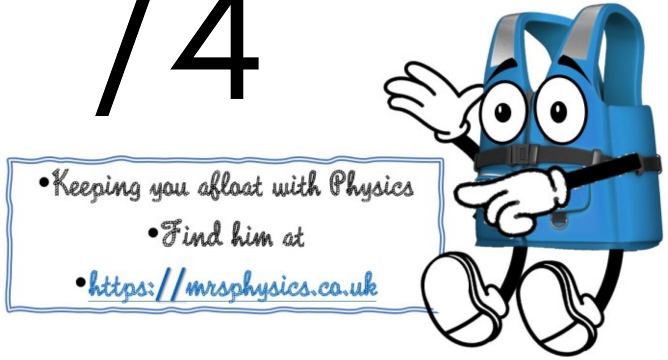
/4



'I$_1$' as in $I_1 d_1^2 = I_2 d_2^2$

- Initial irradiance
- Watts per square metre
- Wm^{-2} or W/m^2
- scalar

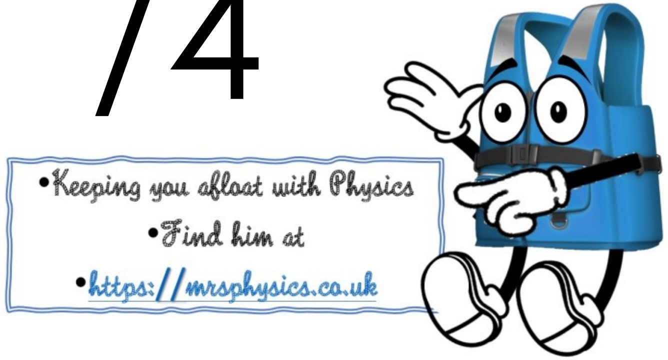
/4



‘ θ_c ’ as in $n = \dfrac{1}{\sin \theta_c}$

- Critical angle
- degrees
- °
- scalar

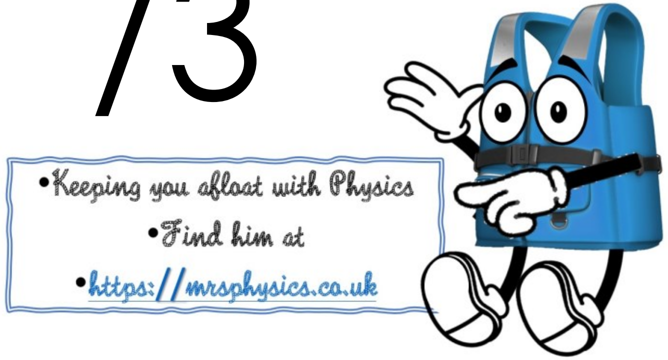
/4



‘ n’ as in $n = \frac{\sin \theta_1}{\sin \theta_2}$

- Refractive index
- No units
- scalar

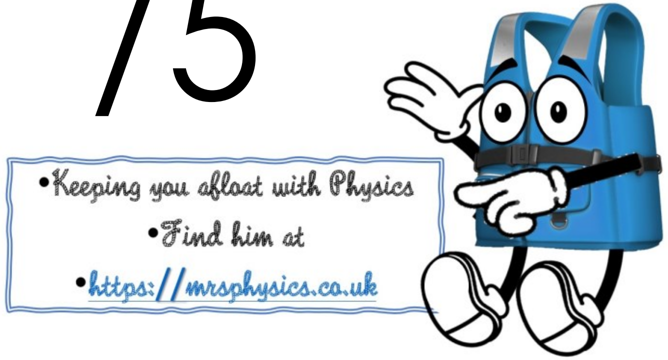
/3



'v_1' as in $\frac{\sin\theta_1}{\sin\theta_2} = \frac{\lambda_1}{\lambda_2} = \frac{v_1}{v_2}$

- Speed of wave in vacuum / equates to air
- metres per second
- ms^{-1} or m/s
- scalar
- This is likely to be equal to
- $3.00 \times 10^8\ ms^{-1}$

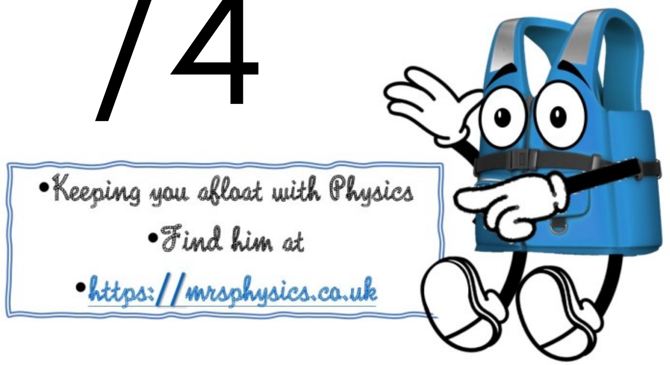
/5



'I$_{peak}$' as in $I_{rms} = \frac{I_{peak}}{\sqrt{2}}$

- Peak current
- Ampere
- A
- scalar

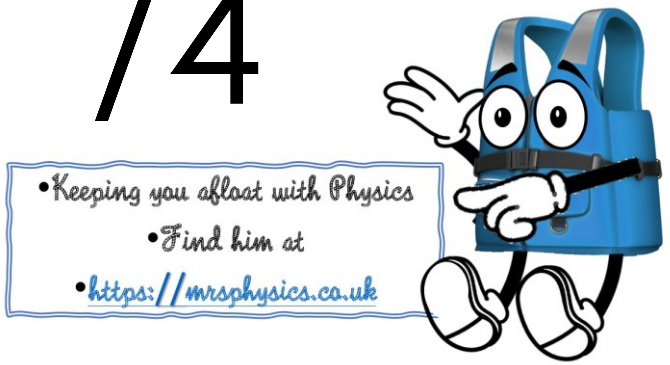
/4



‘I_{rms}’ as in $I_{rms} = \frac{I_{peak}}{\sqrt{2}}$

- Root mean squared current
- Ampere
- A
- scalar

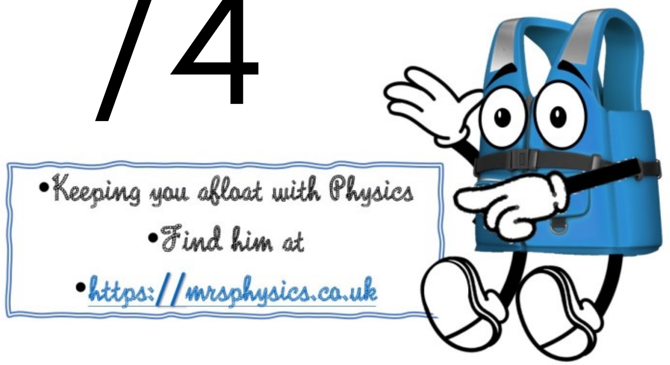
/4



‘V_{peak}’ as in $V_{rms} = \frac{V_{peak}}{\sqrt{2}}$

- Peak voltage
- volt
- V
- scalar

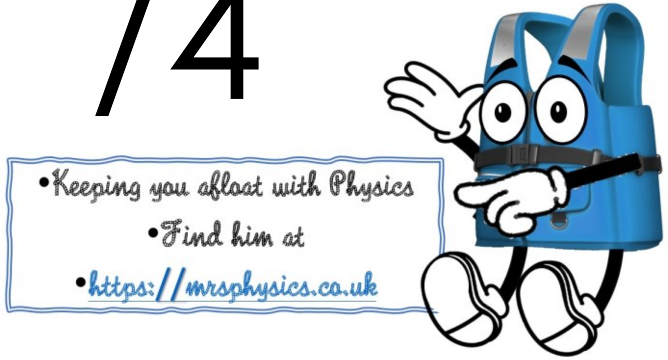
/4



‘V_{rms}’ as in $V_{rms} = \frac{V_{peak}}{\sqrt{2}}$

- Root mean squared voltage
- volt
- V
- scalar

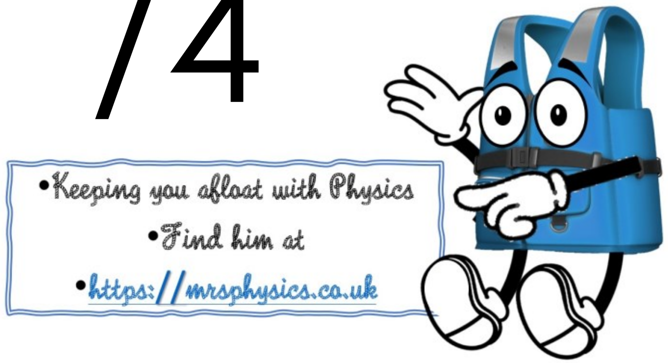
/4



‘T’ as in $T = \frac{1}{f}$

- period
- second
- s
- scalar

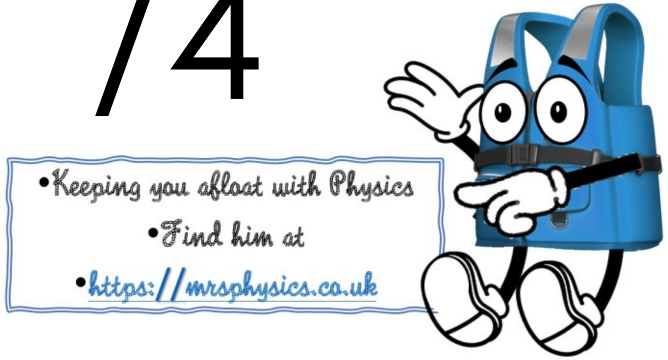
/4



'A' as in *height of a wave*

- amplitude
- metre
- m
- scalar

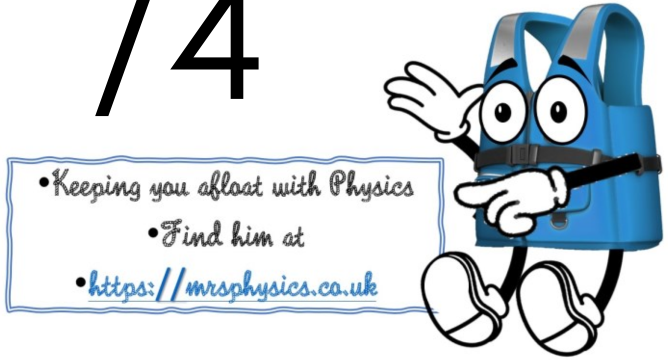
/4



‘C’ as in $E = \frac{1}{2}CV^2$

- capacitance
- Farad
- F (equal to CV^{-1})
- scalar

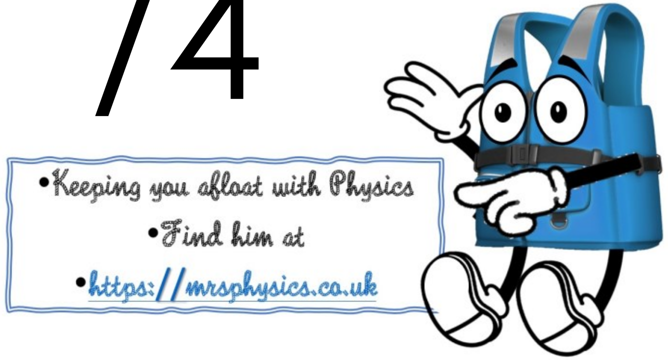
/4



'p' as in $p=\frac{F}{A}$

- pressure
- Newton per square metre or Pascal
- Pa
- scalar

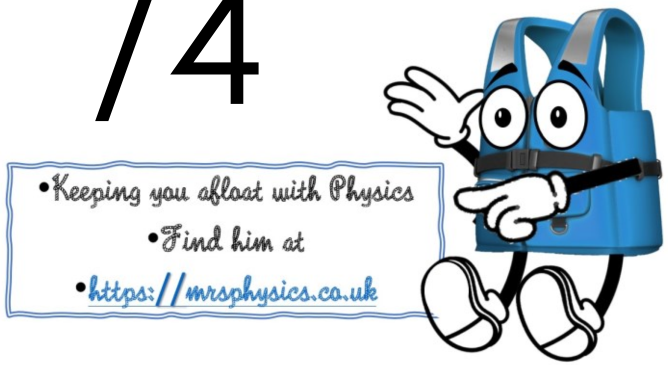
/4



‘Q’ as in $Q = It$

- charge
- coloumb
- C
- scalar

/4



‘V’ as in $V = IR$

- voltage
- volt
- V
- scalar

/4

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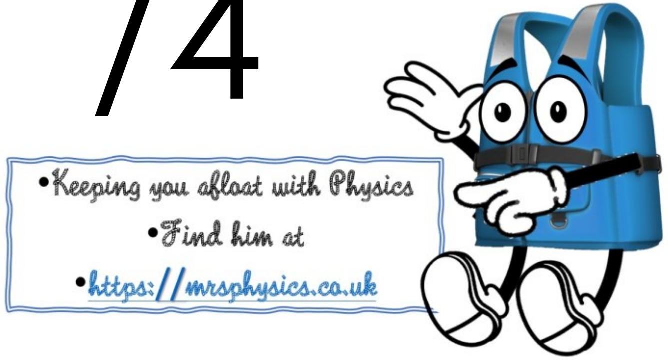
'I' as in $V = IR$

- current
- ampere
- A
- scalar

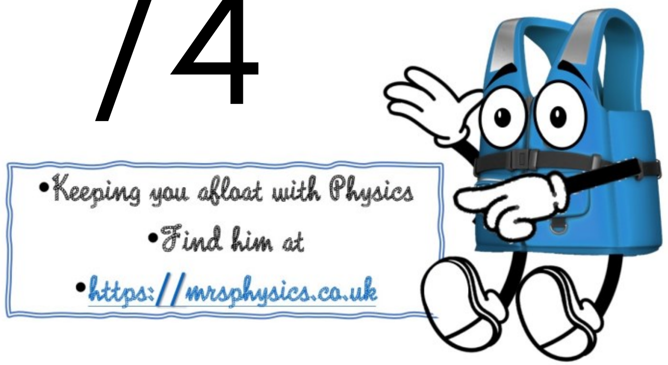
/4



‘R_T’ as in $\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \dots$

- Total resistance of resistors in parallel
- ohm
- Ω
- scalar

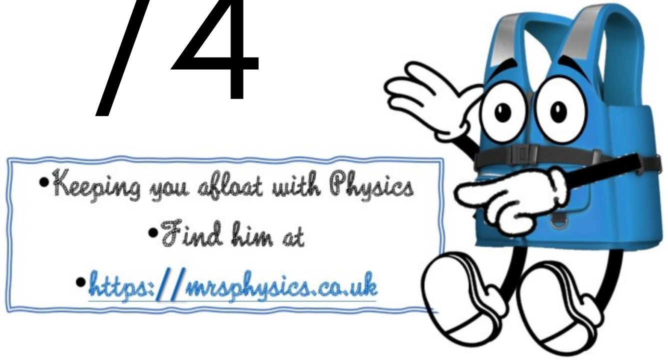
/4



'R' as in $V = IR$

- resistance
- ohm
- Ω
- scalar

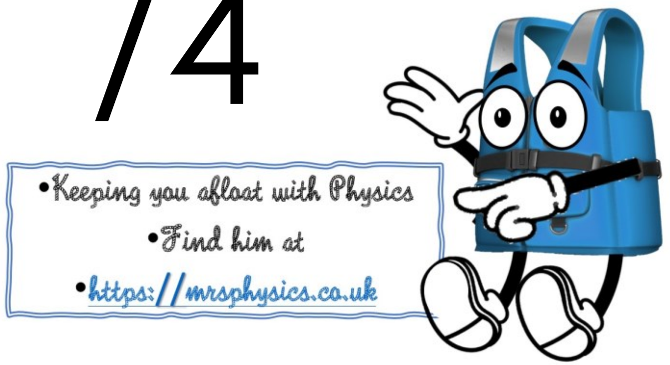
/4



'R' as in $E = I(R + r)$

- Total load resistance (total resistance in the external circuit)
- ohm
- Ω
- scalar

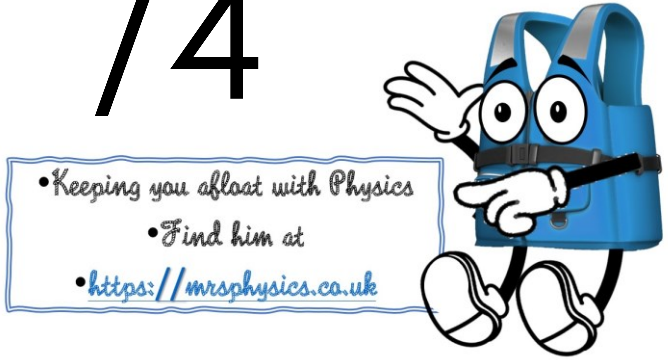
/4



‘ λ’ as in $v=f\lambda$

- wavelength
- metre
- m
- scalar

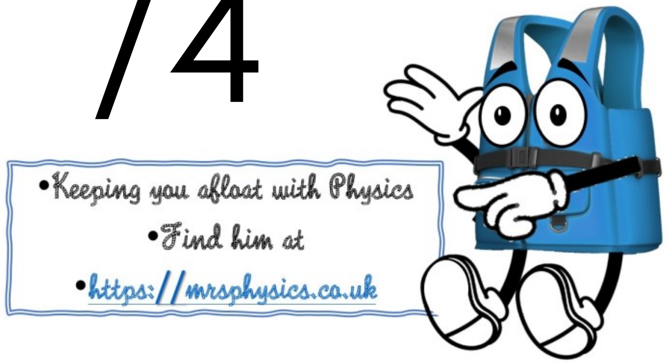
/4



‘A’ as in $p=\frac{F}{A}$

- area
- Square metre
- m^2
- scalar

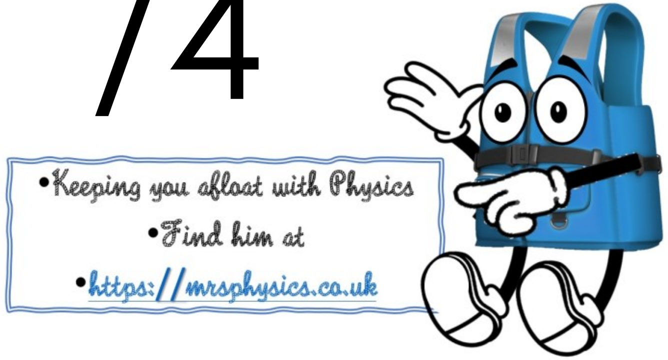
/4



‘ r’ as in $\varepsilon = V + Ir$

- Internal resistance
- ohm
- Ω
- scalar

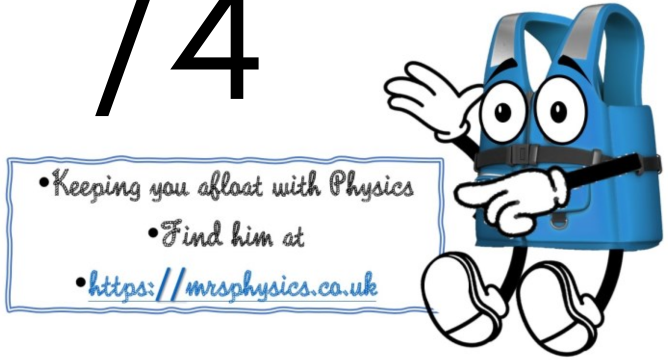
/4



‘ ε or E’ as in $\varepsilon = V + Ir$

- Electromotive force (e.m.f)
- Voltage
- V
- scalar

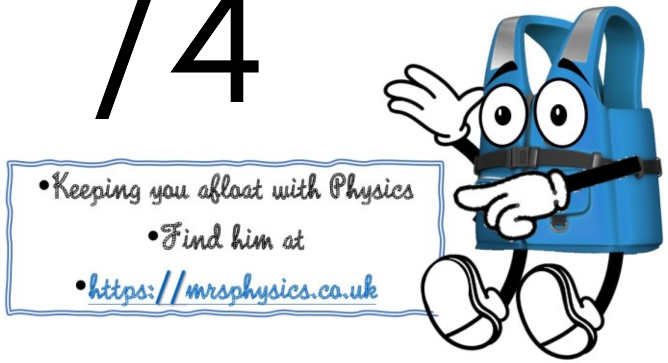
/4



‘Q’ as in $C = \frac{Q}{V}$

- charge
- coloumb
- C
- scalar

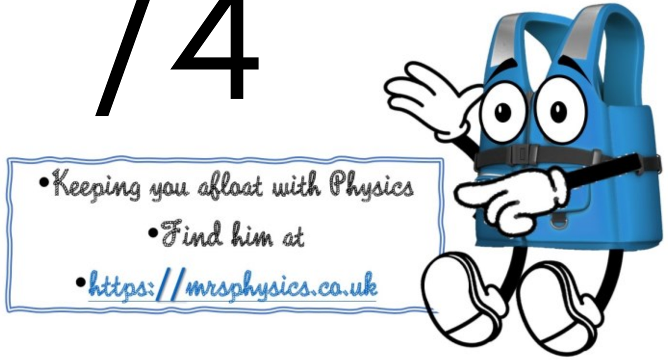
/4



'Q' as in $E = \frac{1}{2}QV = \frac{1}{2}CV^2 = \frac{1}{2}\frac{Q^2}{C}$

- Charge stored on the capacitor
- coloumb
- C
- scalar

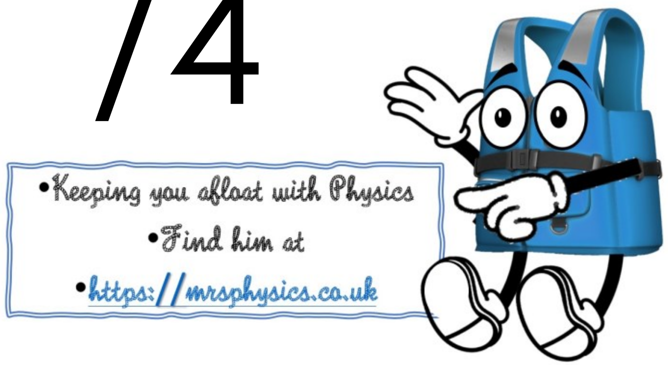
/4



‘t’ as in $a = \frac{v-u}{t}$

- Time for the change
- second
- s
- scalar

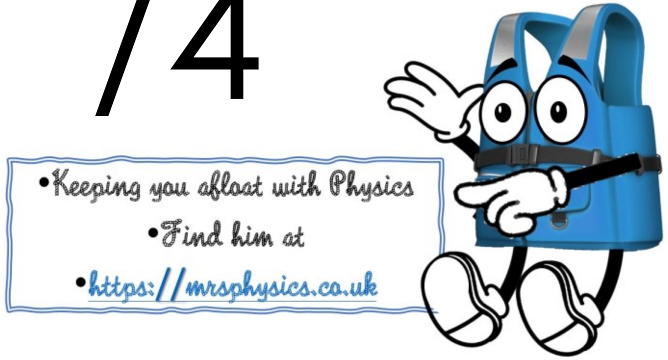
/4



$\boldsymbol{R_2}$ *as in* $\boldsymbol{V_2 = \left(\frac{R_2}{R_1 + R_2}\right) V_s}$

- Resistance of resistor 2
- ohm
- Ω
- scalar

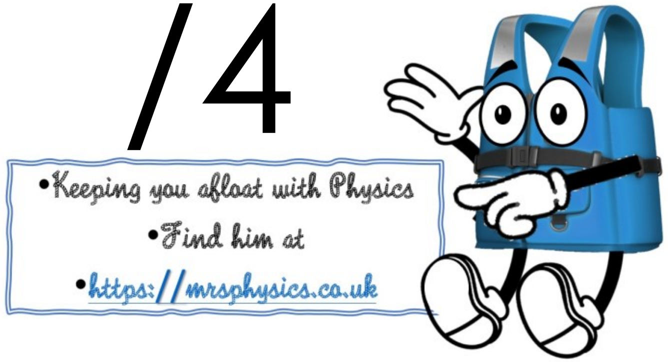
/4



V_s as in $V_2 = \left(\frac{R_2}{R_1 + R_2}\right) V_s$

- Supply Voltage
- Volt
- V
- scalar

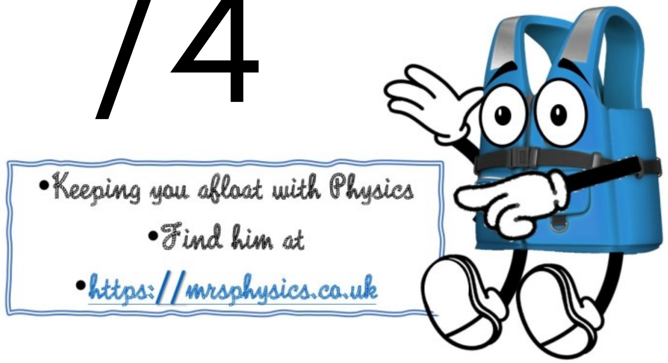
/4



‘ λ ’ as in $v=f\lambda$

- wavelength
- metre
- m
- scalar

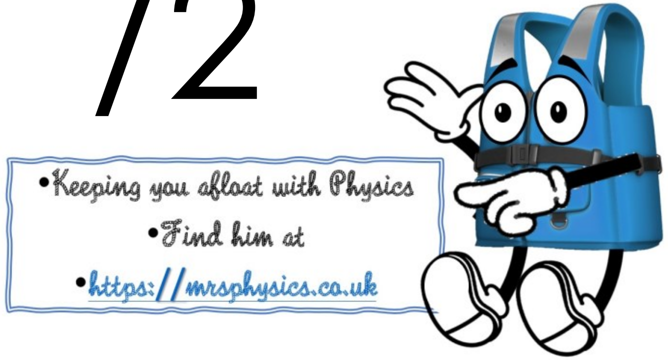
/4



‘m’ as in $\boldsymbol{Path\ difference = m\lambda\ or\ \left(m+\frac{1}{2}\right)\lambda}$

- Integer (a whole number!)
- No units

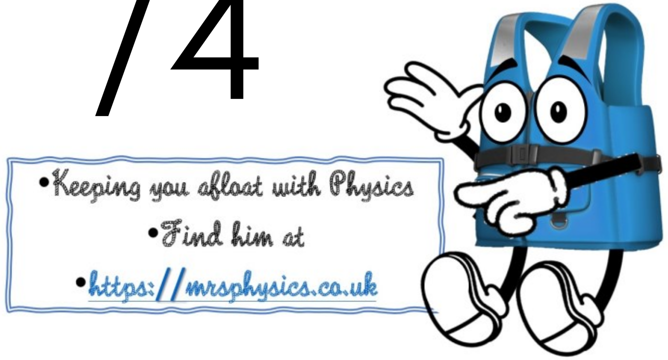
/2



'I' as in $V = IR$

- current
- ampere
- A
- scalar

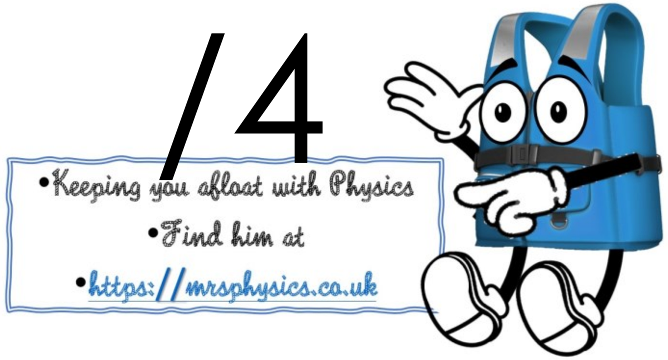
/4



V_2 as in $V_2 = \left(\frac{R_2}{R_1 + R_2}\right)V_s$

- Voltage across resistor 2
- Volt
- V
- scalar

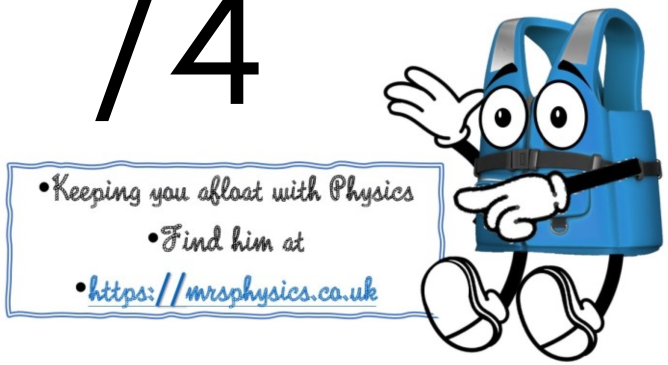
/4



‘R_T’ as in $\boldsymbol{R_T = R_1 + R_2 + \cdots}$

- Total resistance of resistors in series
- ohm
- Ω
- scalar

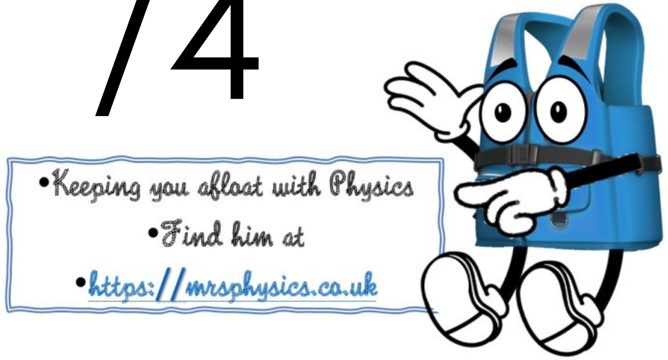
/4



‘Q’ as in $W = QV$

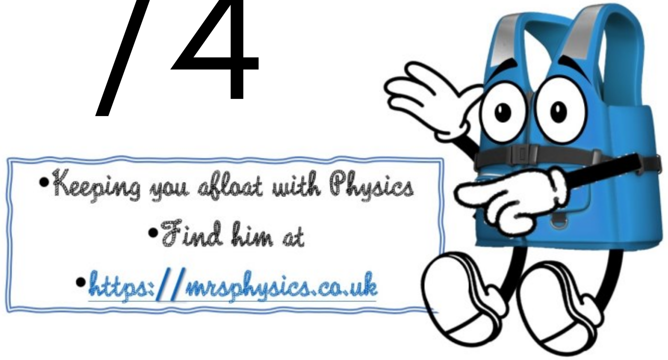
- charge
- coloumb
- C
- scalar

/4



‘ ’

/4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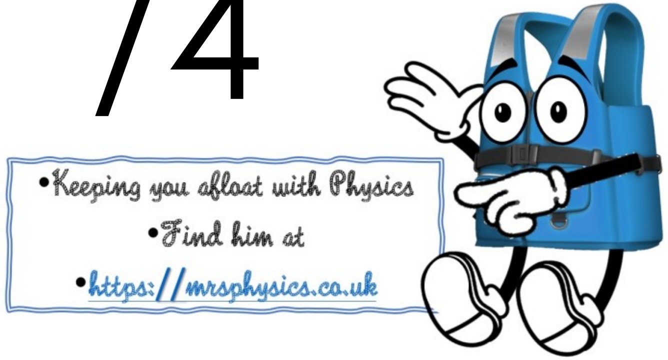
‘ ’

/4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