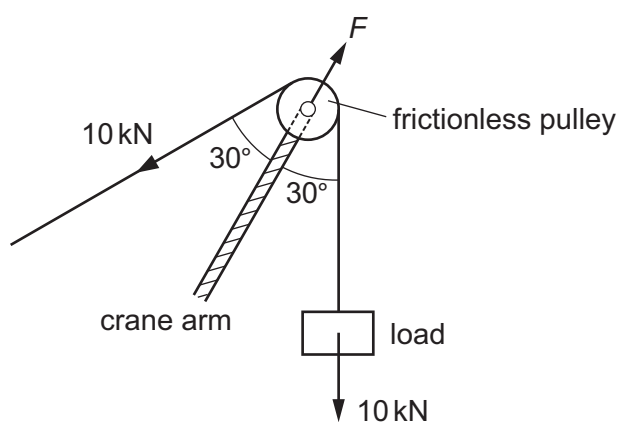


- 1 The prefixes nano (n), micro ( $\mu$ ) and pico (p) are often used with units.

Which row shows their correct values?

	n	$\mu$	p
<b>A</b>	$10^{-6}$	$10^{-9}$	$10^{-12}$
<b>B</b>	$10^{-6}$	$10^{-12}$	$10^{-9}$
<b>C</b>	$10^{-9}$	$10^{-6}$	$10^{-12}$
<b>D</b>	$10^{-12}$	$10^{-9}$	$10^{-6}$

- 2 A crane has an arm to which is attached a frictionless pulley. A cable passes over the pulley and supports a load of 10 kN as shown.



The crane arm exerts a force  $F$  on the pulley.

What is the value of  $F$ ?

- A** 5.0 kN      **B** 8.7 kN      **C** 10 kN      **D** 17 kN
- 3 The SI unit of specific heat capacity is  $\text{J kg}^{-1} \text{K}^{-1}$ .
- What is the unit of specific heat capacity expressed in SI base units?
- A**  $\text{m s}^{-2} \text{K}^{-1}$       **B**  $\text{kg m s}^{-1} \text{K}^{-1}$       **C**  $\text{m}^2 \text{s}^{-2} \text{K}^{-1}$       **D**  $\text{kg m}^2 \text{s}^{-1} \text{K}^{-1}$
- 4 Quantity  $X$  has a fractional uncertainty of  $x$ . Quantity  $Y$  has a fractional uncertainty of  $y$ .
- What is the fractional uncertainty in  $\frac{X}{Y^2}$ ?
- A**  $x + y$       **B**  $x - y$       **C**  $x + 2y$       **D**  $x - 2y$