Exercise 2.2

Q.1 **Identify the property used in the following.**

(i) $a + b = b + a$ — Commutative Property *w.r.t* addition

(ii) $(ab)c = a(bc)$ — Associative Property *w.r.t* multiplication

(iii) $7 \times 1 = 7$ — Multiplicative Identity

(iv) $x > y$ or $x = y$ or $x < y$ — Trichotomy

(v) $ab = ba$ — Commutative *w.r.t* multiplication

(vi) $a + c = b + c = a + b$ — Cancellation Property of addition

(vii) $5 + (-5) = 0$ — Additive Inverse

(viii) $7 \times \dfrac{1}{7} = 1$ — Multiplicative inverse

(ix) $a > b \Rightarrow ac > bc \ (c > 0)$ — Multiplicative property

Q.2 **Fill in the following blanks by stating the properties of real numbers used.**

$3x + 3(y - x)$

$= 3x + 3y - 3x,...$ Distributive property

$= 3x - 3x + 3y,...$ Commutative

$= 0 + 3y,...$ Additive Inverse

$= 3y,...$ Additive identity

Q.3 **Give the name of property used in the following.**

(i) $\sqrt{24} + 0 = \sqrt{24}$ — Additive Identity

(ii) $-\dfrac{2}{3}\left[5 + \dfrac{7}{2}\right] = \left[-\dfrac{2}{3}\right](5) + \left[-\dfrac{2}{3}\right]\left[\dfrac{7}{2}\right]$ — Distributive Property

(iii) $\pi + (-\pi) = 0$ — Additive Inverse

(iv) $\sqrt{3}.\sqrt{3}$ is a real number. — Closure property w.r.t x.

(v) $\left[-\dfrac{5}{8}\right]\left[-\dfrac{8}{5}\right] = 1$ — Multiplicative Inverse.