Classify the following numbers as rational or irrational. give reasons to support your answer.

(i) $\sqrt{\dfrac{3}{81}}$

(ii) $\sqrt{361}$

(iii) $\sqrt{21}$

(iv) $\sqrt{1.44}$

(v) $\dfrac{2}{3}\sqrt{6}$

(vi) 4.1276

(vii) $\dfrac{22}{7}$

(viii) 1.232332333...

(ix) 3.040040004....

(x) 2.356565656...

Give an example of two irrational numbers whose
(i) difference is an irrational number.
(ii) difference is a rational number.
(iii) sum is an irrational number.
(iv) sum is a rational number.
(v) product is an irrational number.
(vi) product is a rational number.
(vii) quotient is an irrational number.
(viii) quotient is a rational number.

ANSWER:

(i) 2 irrational numbers with difference an irrational number will be $3 - \sqrt{5}$ and $3 + \sqrt{5}$.

(ii) 2 irrational numbers with difference is a rational number will be $5 + \sqrt{3}$ and $2 + \sqrt{3}$

Remaining questions do your self