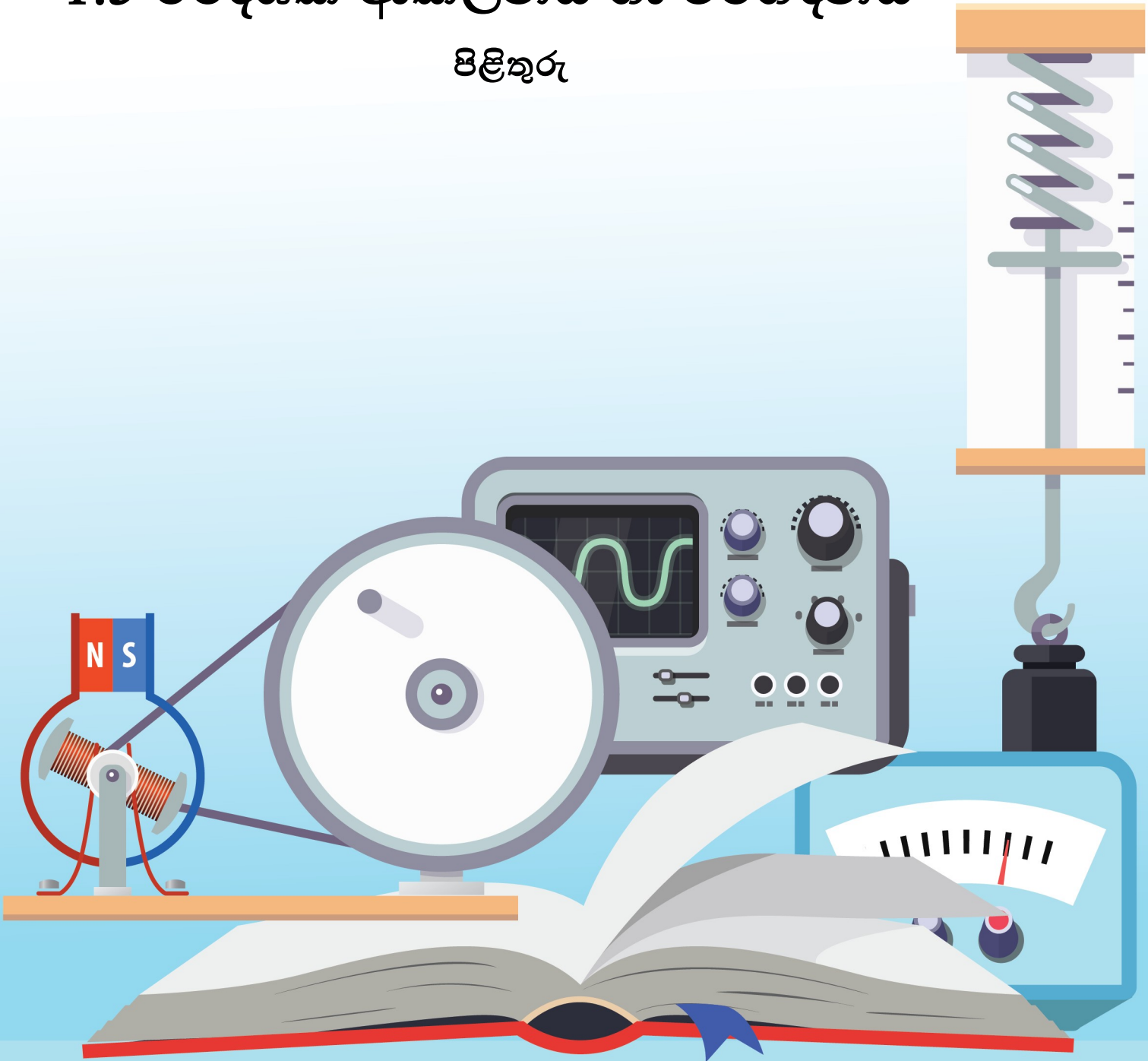
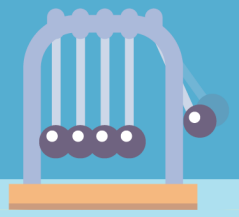


භෞතික විද්‍යාව

1.5 දෛශික ආකලනය හා විභේදනය පිළිතුරු





පිළිතුරු

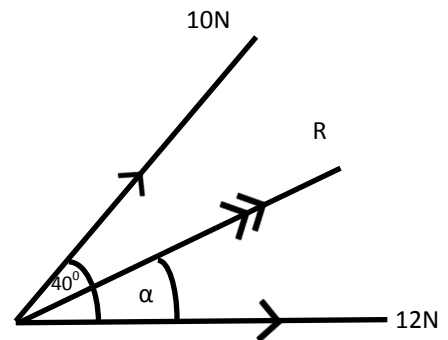
- 02. 3
- 03. 3
- 04. 5
- 05. 2
- 06. 3
- 07. 4
- 08. 3

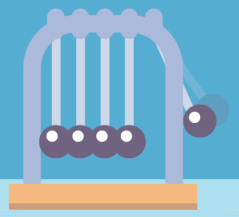
1) i හි පිළිතුර ලබා ගැනීමට දී ඇති උදාහරණය අනුගමනය කල හැකිය.

i) $12\text{N} + 10\text{N} = 22\text{N}$ බලවල දිශාව

ii)

$$\begin{aligned}
 a &= 12 \\
 b &= 10 \\
 \theta &= 45 \\
 R^2 &= a^2 + b^2 + 2ab \cos \theta \\
 &= 12^2 + 10^2 + 2 \times 12 \times 10 \times \cos 45 \\
 &= 144 + 100 + 120 \times 2 \times \frac{1}{\sqrt{2}} \\
 R &= \sqrt{244 + 120\sqrt{2}} \\
 &= 20.34\text{N} \\
 \tan \alpha &= \frac{b \sin \theta}{a + b \cos \theta} \\
 &= \frac{10 \times \frac{1}{\sqrt{2}}}{12 + 10 \times \frac{1}{\sqrt{2}}} \\
 &= \frac{5\sqrt{2}}{12 + 5\sqrt{2}} \\
 &= 0.3707
 \end{aligned}$$





iii)

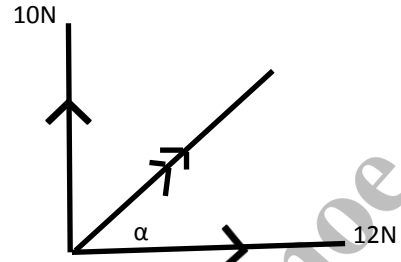
$$\alpha = 90^\circ \text{ වූ විට}$$

$$R = \sqrt{12^2 + 10^2}$$

$$R = \sqrt{244}$$

$$= 15.62\text{N}$$

$$\tan \alpha = \frac{12}{10} = \frac{5}{6} = 0.833$$



iv)

150 වූ විට

$R = \sqrt{12^2 + 10^2 - 2 \times 12 \times 10 \times \cos 30}$ ලෙස සුළු කල හැකිය.

$$\alpha = \frac{10 \sin 30}{12 - 10 \cos 30} \text{ ලෙස සුළු කල හැකිය}$$

v) ප්‍රතිවිරුද්ධ වීම $R = 12 - 10 = 2\text{N}$

සම්ප්‍රසන්නයේ දිශාව 12N බලයේ දිශාව වේ.

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