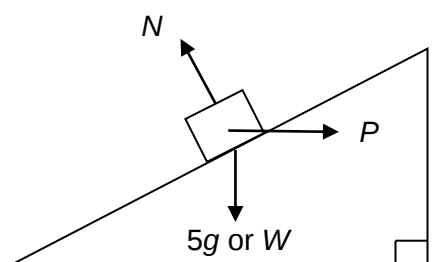


2017 VCE Specialist Mathematics 1 (NHT) examination report

Specific information

This report provides sample answers or an indication of what answers may have included. Unless otherwise stated, these are not intended to be exemplary or complete responses.

Question 1a.



Question 1b.

$$\frac{5g}{\sqrt{3}}$$

Question 2

$$a = \frac{4}{3}$$

Question 3

$$4\sqrt{15}$$

Question 4

$$a = -5, b = 1; a = -2, b = -2$$

Question 5

$$\frac{\pi^2}{3}$$

Question 6

$$x = n\pi, \pm \frac{\pi}{3} + n\pi, n \in \mathbb{Z}$$

Question 7a.

$$y = 4 - \frac{1}{x+1}$$

Question 7b.

$$\frac{d^2y}{dx^2} = -2(4-y)^3$$

Question 8

$$F = ma = \frac{6 \arctan \sqrt{x}}{\sqrt{x}(1+x)}$$

Question 9ai.

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Question 9aii.

$$\sqrt{369} = 3\sqrt{41}$$

Question 9bi.

$$H_0: \mu = 4, \quad H_1: \mu < 4$$

Question 9bii.

$$E(\bar{X}) = 4$$

$$\text{Var}(\bar{X}) = \frac{36}{64}$$

$$\text{standard deviation of } \bar{X} = \frac{3}{4} = 0.75$$

Question 10

$$c = -3$$

Question 11

6a