

Brief Answers to Grade Grabber 3

Answer 1

- (i) 80 cm^2
- (ii) 37.2 cm^2
- (iii) 84.4 cm^2

Answer 2

7.1 knots

Answer 3

- (i) 5 m
- (ii) 500 cm
- (iii) 250000 cm^2
- (iv) No

[3, 1, 4 marks]

Answer 4

$$\frac{dy}{dx} = 20x^3 + 2x$$

[2 marks]

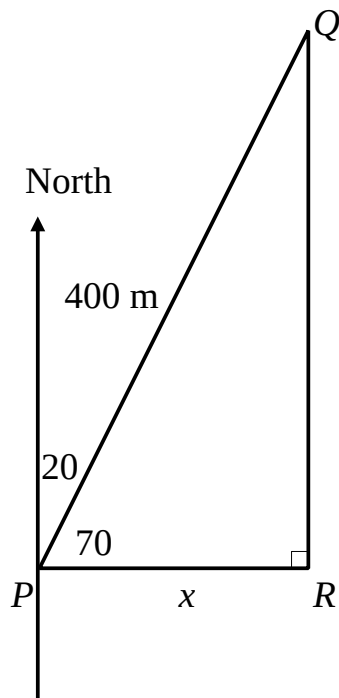
Answer 5

- (i) $(x + 5)^2 = 1$
- (ii) -4 or -6

[1, 2 marks]

Answer 6

(i)



[2 marks]

- (ii) 136.8 m

[2 marks]

Answer 7

$$\frac{\sqrt{3}}{3 - \sqrt{3}} \times \frac{3 + \sqrt{3}}{3 + \sqrt{3}} = \frac{3\sqrt{3} + 3}{6} \times \frac{1 + \sqrt{3}}{2}$$

[3 marks]

Answer 8

(i) 141 cm

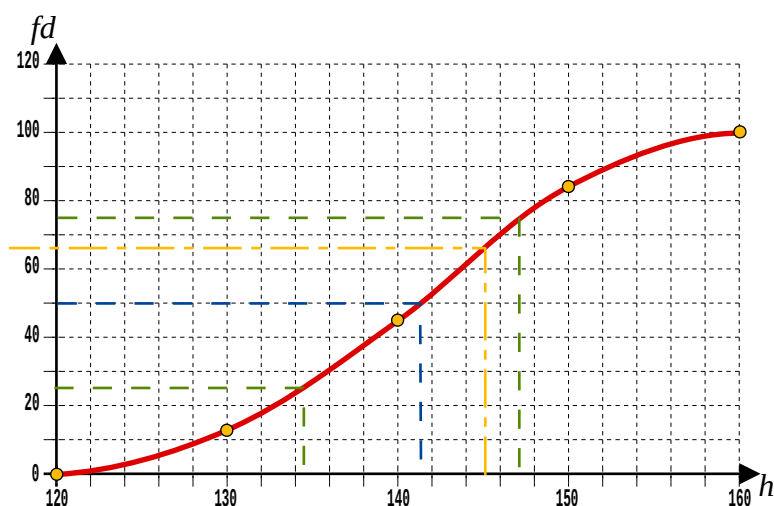
[3 marks]

(ii) Data is grouped, so exact heights of towers lost

[1 mark]

(iii) Points to plot are at END OF INTERVALS

(120, 0) $\rightarrow$ (130, 12) $\rightarrow$ (140, 45) $\rightarrow$ (150, 83) $\rightarrow$ (160, 100)



[2 marks]

(iv) Median is 140 - 142 cm (Blue broken line on the graph)

IQR = 11 - 14 cm (Green broken lines on the graph)

[3 marks]

$$(v) \quad \frac{0.5 \times 38 + 17}{100} = 0.36$$

[1 mark]

Answer 9

(i) 7

(ii) To prevent the taking of the square root of a negative number

$$(iii) \quad f^{-1}(x) = x^2 + 11$$

(iv) 20

[1, 2, 2, 1 marks]

Answer 10

(i) 8000 cm³ 3.375 m³

(ii) 1 m³ $\equiv$ 1000000 cm³

(iii) The cube with side length 1.5 m has the greater volume

[2, 1, 1 marks]