Brief Answers to Grade Grabber 1

Answer 1

(i) $\frac{4418}{5280} \times 100 = 84\%$ of a mile high **(ii)** 1347 m

[2, 1 marks]

Answer 2

(i) 6

(ii) $x = 5$ must be excluded because it would cause a division by zero
Division by zero is undefined and a calculator will reject such a request

(iii) 2

[1, 1, 2 marks]

Answer 3

(i) $-2 < x \leqslant 4$

(ii) $x \in \{-1, 0, 1, 2, 3, 4\}$

[2, 1 marks]

Answer 4

(i) 69.3 paces

(ii) 58 m

(iii) The triangle would be isosceles with the number of paces walked being the same as the width of the river.
Yachts moving along a shore make use of this to work out their distance from the coast.

[2, 1, 1 marks]

Answer 5

(i) $m = 3$ **(ii)** $y = 3x - 11$

[2, 3 marks]

Answer 6

Perimeter = 18.3 cm The exact answer is $4\left(\sqrt{2} + \sqrt{10}\right)$ cm

[4 marks]

Answer 7

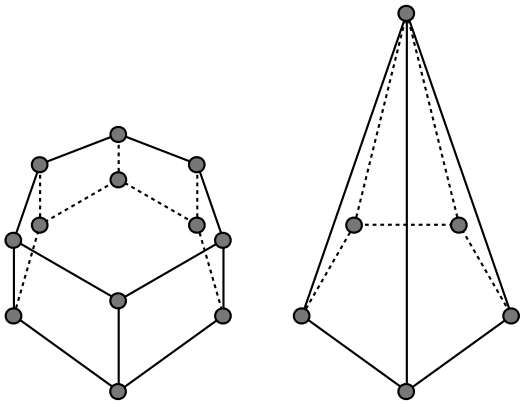
(i) $P = 4I^2$

(ii) 576 watts

[3, 2 marks]

Answer 8

(i)



[4 marks]

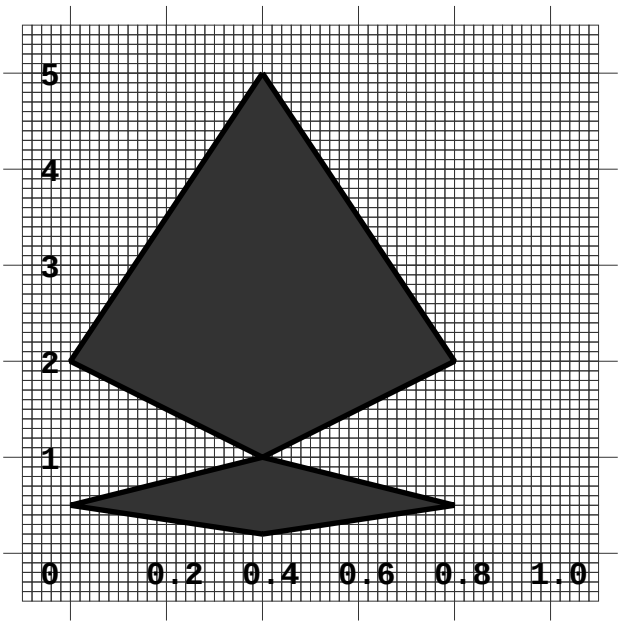
(ii) For the hexagonal based prism, $V + F - E = 12 + 8 - 18 = 2$

For the pentagonal based pyramid, $V + F - E = 6 + 6 - 10 = 2$

[2 marks]

Answer 9

(i), **(ii)** and **(iv)**



(iii) $(x, y) \rightarrow (x, \frac{1}{y})$: $(0.4,\ 0.2) \rightarrow (0.4,\ 5)$

$(0,\ 0.5) \rightarrow (0,\ 2)$

$(0.4,\ 1) \rightarrow (0.4,\ 1)$

$(0.8,\ 0.5) \rightarrow (0.8,\ 2)$

[1, 1, 2, 2 marks]