

1 Astrid wants to buy some oil.

She can buy the oil from either Dane Oil or Arctic Oil.

Here is information about the price that each company will charge Astrid.

| Dane Oil | Arctic Oil |
|--|--|
| (4.2×10^5) litres for 2 500 000 Krone | (8.6×10^5) litres for 770 000 Dollars |

Astrid wants to get the better value for money for the oil.

$$1 \text{ Dollar} = 6.57 \text{ Krone}$$

From which company should she buy her oil, Dane Oil or Arctic Oil?

You must show your working.

(Total for Question 1 is 4 marks)

2 M varies directly as the cube of h

$$M = 4 \text{ when } h = 0.5$$

Find the value of h when $M = 500$

.....

(Total for Question 2 is 4 marks)

- 3 y is inversely proportional to \sqrt{x}
 x is directly proportional to T^3

Given that $y = 8$ when $T = 25$

find the exact value of T when $y = 27$

$T = \dots\dots\dots$

(Total for Question 3 is 4 marks)

4 A is inversely proportional to C^2

$A = 40$ when $C = 1.5$

Calculate the value of C when $A = 1000$

$C = \dots\dots\dots$

(Total for Question 4 is 3 marks)

5 F is inversely proportional to the square of r

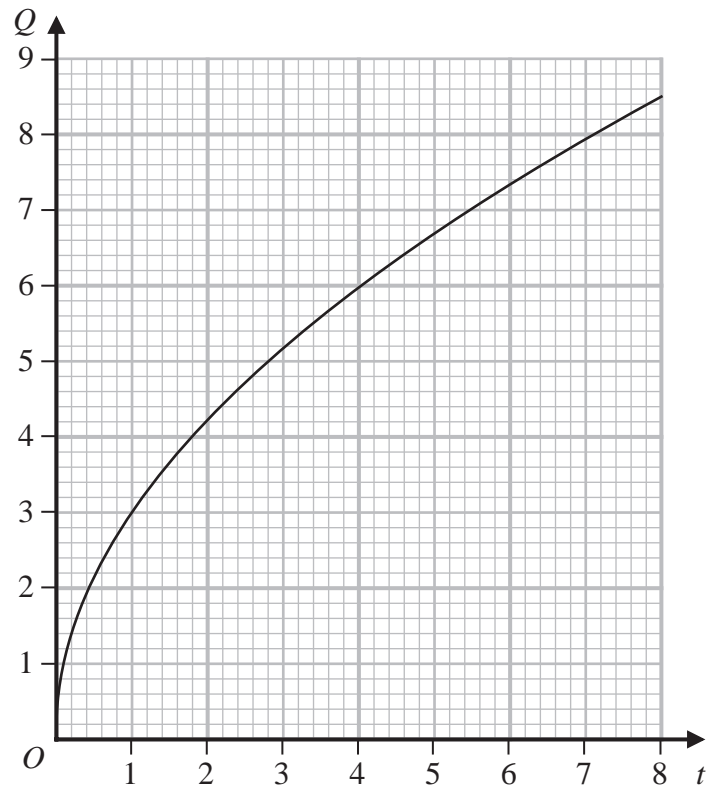
$$F = 36 \text{ when } r = 4$$

(a) Find a formula for F in terms of r

.....
(3)

(Total for Question 5 is 3 marks)

- 6 Q is directly proportional to \sqrt{t}
The graph shows the relationship between Q and t for $0 < t < 8$



- (a) Find a formula for Q in terms of t

.....
(3)

(Total for Question 6 is 3 marks)