

13 The time, T seconds, for a hot sphere to cool is proportional to the square root of the surface area, $A \text{ m}^2$, of the sphere.

When $A = 100$, $T = 40$.

Find the value of T when $A = 60$.

Give your answer correct to 3 significant figures.

20. q is inversely proportional to the square of t .

When $t = 4$, $q = 8.5$

(a) Find a formula for q in terms of t .

$q = \dots\dots\dots$

(b) Calculate the value of q when $t = 5$

22. D is proportional to S^2 .

$$D = 900 \text{ when } S = 20$$

Calculate the value of D when $S = 25$

$$D = \dots\dots\dots$$

(Total

25. y is directly proportional to x .

When $x = 500$, $y = 10$

(a) Find a formula for y in terms of x .

$y = \dots\dots\dots$

(b) Calculate the value of y when $x = 350$

$y = \dots\dots\dots$

21. M is directly proportional to L^3 .

When $L = 2$, $M = 160$

Find the value of M when $L = 3$

26. P is inversely proportional to V .

When $V = 8$, $P = 5$

(a) Find a formula for P in terms of V .

$P = \dots\dots\dots$

(b) Calculate the value of P when $V = 2$