

DO NOT WRITE IN THIS AREA

14  $F$  is inversely proportional to the square of  $v$ .

Given that  $F = 6.5$  when  $v = 4$

find a formula for  $F$  in terms of  $v$ .

(Total for Question 14 is 3 marks)

DO NOT WRITE IN THIS AREA



14  $B$  is inversely proportional to the square of  $d$

$$B = 0.25 \text{ when } d = 12$$

Find a formula for  $B$  in terms of  $d$

.....  
**(Total for Question 14 is 3 marks)**

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



# January 2022 Paper 1H

**15**  $A$  is inversely proportional to  $C^2$

$A = 40$  when  $C = 1.5$

Calculate the value of  $C$  when  $A = 1000$

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

$C = \dots$

**(Total for Question 15 is 3 marks)**



**16**  $A$  is inversely proportional to the square of  $r$

$$A = 5 \text{ when } r = 0.3$$

(a) Find a formula for  $A$  in terms of  $r$

.....  
(3)

(b) Find the value of  $A$  when  $r = 7.5A$

$$A = \dots$$

(3)

**(Total for Question 16 is 6 marks)**



- 16** The following table gives values of  $x$  and  $y$  where  $y$  is inversely proportional to the square of  $x$ .

$x$	1.5	2	3	4
$y$	16	9	4	2.25

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

.....  
(3)

Given that  $x > 0$

- (b) find the value of  $x$  when  $y = 144$

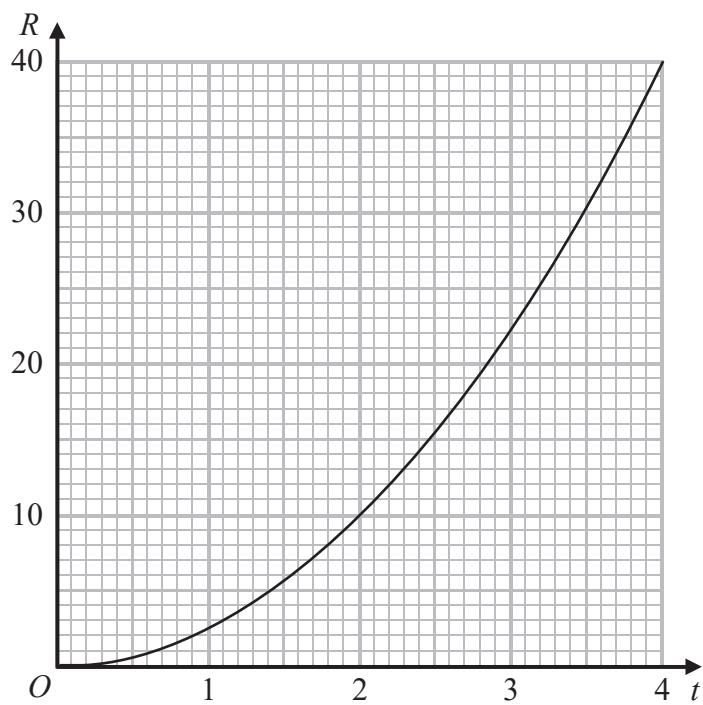
.....  
(2)

**(Total for Question 16 is 5 marks)**



**16**  $R$  is proportional to  $t^2$

The graph shows the relationship between  $R$  and  $t$  for  $0 \leq t \leq 4$



(a) Find a formula for  $R$  in terms of  $t$ .

.....  
(3)



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Given also that  $R = \frac{8}{5x}$

(b) show that  $t$  is inversely proportional to  $\sqrt{x}$  for  $t > 0$

(2)

**(Total for Question 16 is 5 marks)**



**17**  $F$  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)

(b) Work out the value of  $F$  when  $r = 48$

.....  
(1)

**(Total for Question 17 is 4 marks)**



P 7 2 7 9 2 A 0 1 7 2 8

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

17  $y$  is inversely proportional to  $\sqrt{x}$

$y = c^4$  when  $x = c^2$  where  $c$  is a positive constant.

Find a formula for  $y$  in terms of  $x$  and  $c$   
Give your answer in its simplest form.

.....  
(Total for Question 17 is 3 marks)



P 7 2 4 3 7 R A 0 1 9 3 2