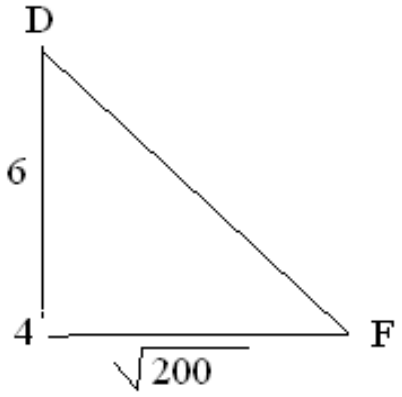
2. Length

1.	Mass = Density x volume But Density is constant. x y Vol (270000 x 2.8): x2.1 = $\frac{270000}{2.1}$ x 2.8 = 360m	M1 M1 M1 A1	
		4	

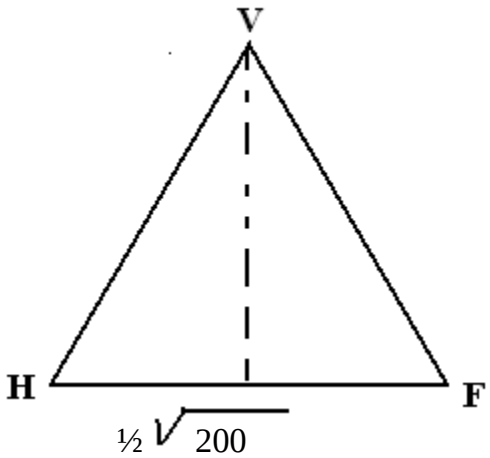
2. a.)



$DF_1 = \sqrt{6^2 + (\sqrt{200})^2}$ M1

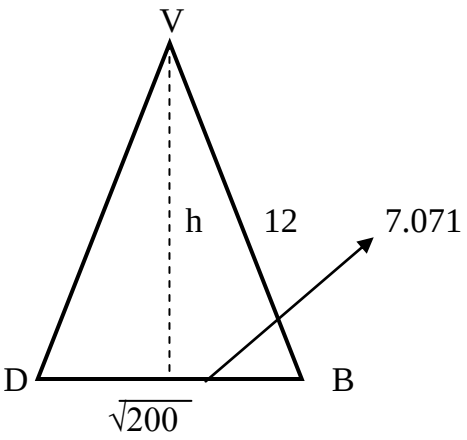
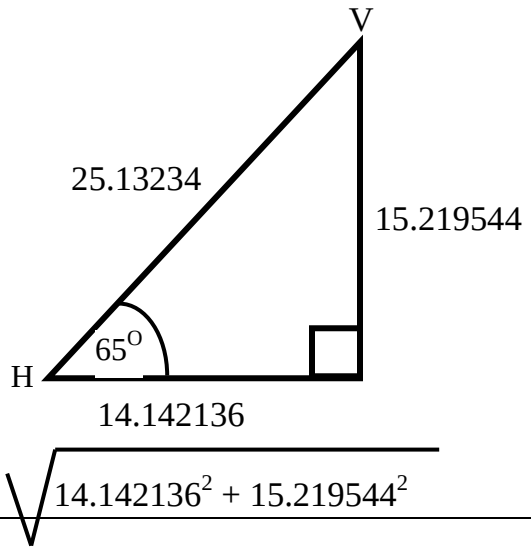
$= 15.362291$ A1

b.)



$\sqrt{144 - ½\sqrt{200}}^{\,2}$

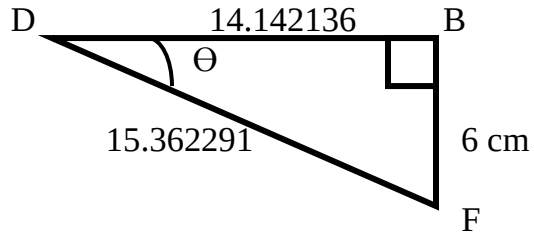
$= 9.6953597$ M1

	$+\frac{6}{\sqrt{15.6953597}}$		
	$\text{Tan } \Theta = \frac{15.6953597}{7.0710678}$	A1	
	$= 2.219659$		
C.	$\Theta = 65.747499^{o}$	B1	
	½ HF		
	$½ \times \sqrt{200}$		
	$= 7.0710678$		
d.		M1 B1	
	$\sqrt{144 - 50} = 9.6953597$		
	Height = 9.6953597 + 6		
	= 15.69536		
e.		B1	

= 25.13234

f.

$\angle$ BDF



M1

$\frac{\Theta}{6} = \frac{90}{15.362291}$

A1
10

$\Theta = \frac{90 \times 6}{15.362291}$

$= 35.15^0$

3

$Row = \frac{960}{x}, Column = \frac{960}{110-x}$

$\frac{960}{x} = \frac{960}{110-x} + 20$

$(110-x)960 = 960x + 20x(110-x)$

$x^2 - 206x + 5380 = 0$

$x^2 - 30x - 176x + 5380 = 0$

$x(x-30) - 176(x-30) = 0$

$(x-30)(x-176=0)$

$x = 176$

or

$x = 30$

Dimensions 30 by 80 cm

No of tiles =

	$\frac{960\times960}{30\times30}$ $=384$ Cost = $\frac{364}{12}\times1500+3000$ $=sh.483000$		
		10	