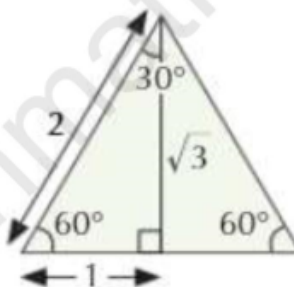
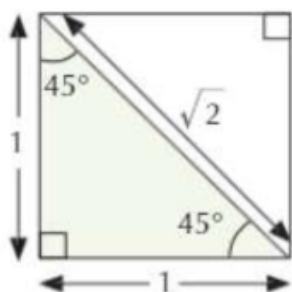




Memorize  $\sin x$ ,  $\cos x$ ,  $\tan x$  where  $x$  is  $0^\circ, 30^\circ, 45^\circ, 60^\circ$  or  $90^\circ$  (without calculator)

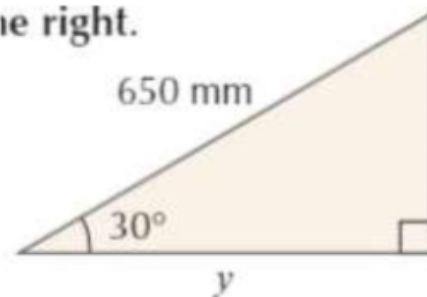
|                | $0^\circ$ | $30^\circ$           | $45^\circ$           | $60^\circ$           | $90^\circ$ |
|----------------|-----------|----------------------|----------------------|----------------------|------------|
| $\sin(\theta)$ | 0         | $\frac{1}{2}$        | $\frac{1}{\sqrt{2}}$ | $\frac{\sqrt{3}}{2}$ | 1          |
| $\cos(\theta)$ | 1         | $\frac{\sqrt{3}}{2}$ | $\frac{1}{\sqrt{2}}$ | $\frac{1}{2}$        | 0          |
| $\tan(\theta)$ | 0         | $\frac{1}{\sqrt{3}}$ | 1                    | $\sqrt{3}$           | undefined  |



\* may help to memorize these triangles

1. Without using a calculator, find the exact length of side  $y$ .

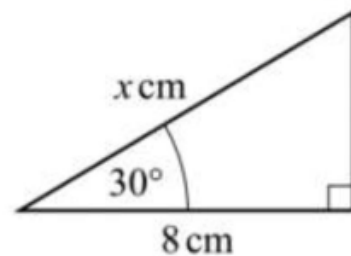
ie right.



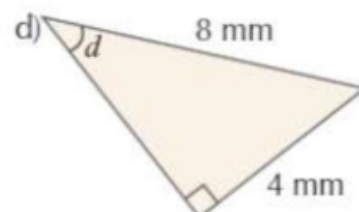
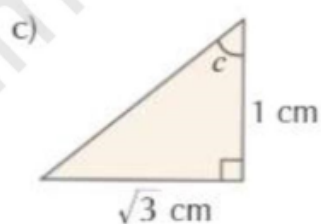
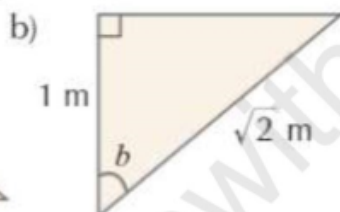
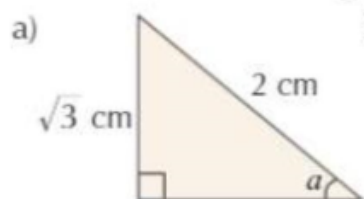


2. Find the exact value of  $x$ . [4]

0580/02/SP/25 Q22)

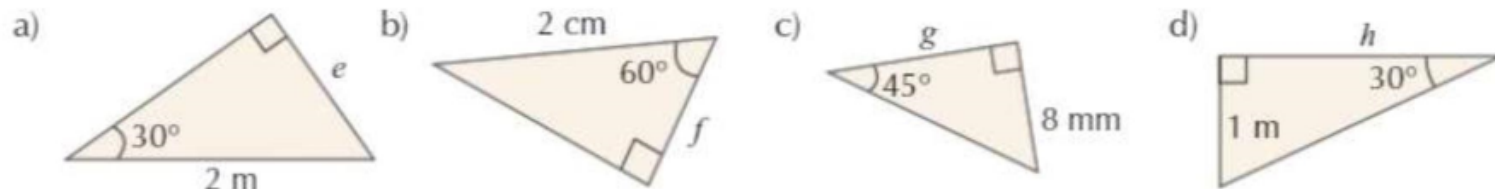


3. Find the size of the angles marked with letters.





4. Find the exact length of the sides marked with letters.



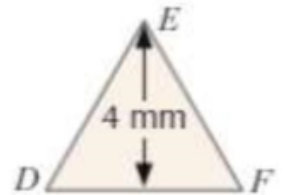
5. Show that:

a)  $\tan 45^\circ + \sin 60^\circ = \frac{2+\sqrt{3}}{2}$     b)  $\sin 45^\circ + \cos 45^\circ = \sqrt{2}$     c)  $\tan 30^\circ + \tan 60^\circ = \frac{4\sqrt{3}}{3}$



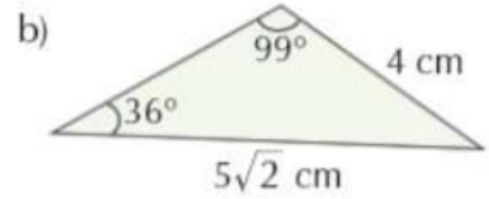
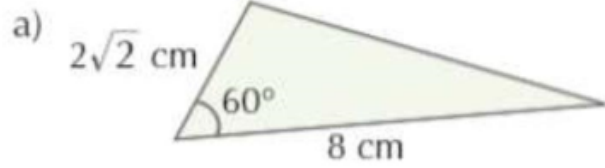
6. Triangle  $ABC$  is isosceles.  $AC = 7\sqrt{2}$  cm and angle  $ABC = 90^\circ$ . What is the exact length of side  $AB$  ?

7. Triangle  $DEF$  is an equilateral triangle with a perpendicular height of 4 mm.  
What is the exact side length of the triangle? Give your answer in its simplest form.

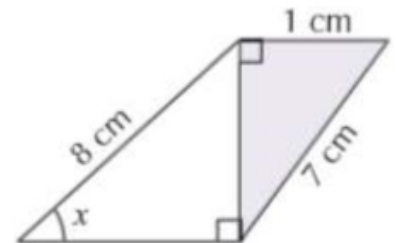




8. Find the exact area of the following triangles

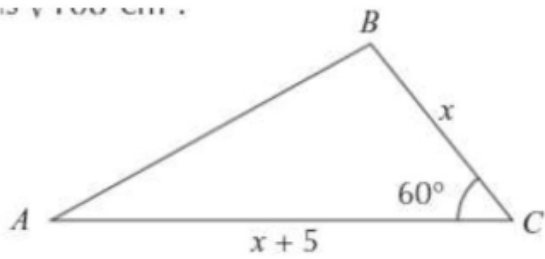


9. The shape shown below is made up of two right-angled triangles  
Find the size of angle  $x$ .





10. The diagram shows a triangle  $ABC$  where angle  $ACB = 60^\circ$ ,  $AC = x + 5$  cm and  $BC = x$  cm. The area of the triangle is  $\sqrt{108}$  cm<sup>2</sup>. Find the length of  $AB$ .



Answers

|  |   |
|--|---|
| 1) $325\sqrt{3}$   | 7) $\frac{8\sqrt{3}}{3}$ mm                               |
| 2) $\frac{16}{\sqrt{3}}$ or $\frac{16\sqrt{3}}{3}$             | 8) (a) $4\sqrt{6}$ cm <sup>2</sup> (b) 10 cm <sup>2</sup> |
| 3) (a) $60^\circ$ (b) $45^\circ$ (c) $60^\circ$ (d) $30^\circ$ | 9) $60^\circ$   |
| 4) (a) 1m (b) 1cm (c) 8mm (d) $\sqrt{3}$ m                     | 10) 7cm   |
| 6) 7cm   |   |