13. Given that $a = \sqrt{3}$ and $b = \sqrt{48}$

(a) find the value of a^2

.....

(1)

(b) show that $(a + b)^2 = 75$

.....

(3)

---

14. Expand and simplify $(3 + \sqrt{8})(4 + \sqrt{2})$

Give your answer in the form $a + b\sqrt{2}$ where a and b are integers.

.....

(4)

---

15. Simplify $5\sqrt{8} + \sqrt{18}$

.....

(2)

16. Rationalise the denominator of

$$\frac{8}{\sqrt{2}}$$

.....

(2)

---

17. Expand and simplify $(\sqrt{7} - \sqrt{3})^2$

.....

(2)

---

18. Write $\sqrt{11} + \sqrt{99}$ in the form $a\sqrt{b}$ where a and b are integers.

.....

(2)

19. Expand $(8 - \sqrt{3})^2$ giving your answer in form $a + b\sqrt{3}$

.....

(2)

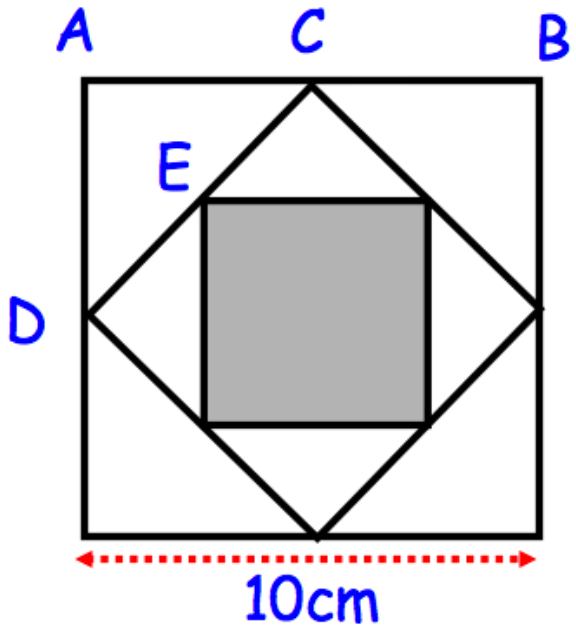
---

20. Show that $(\sqrt{2} + 3\sqrt{8})^2 = 98$

.....

(3)

21. The midpoints of the sides of a square of side 10cm are joined to form another square. This process is then repeated to create the shaded square.



Find the area of the shaded square.

.....cm²

(4)

22. Given that

$$\frac{10 - \sqrt{32}}{\sqrt{2}} = a + b\sqrt{2}$$

where a and b are integer.

Find the values of a and b.

a = ...

b = ...

(4)

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23. A shed has dimensions, in metres, of

$$\text{height} = \sqrt{5}, \quad \text{width} = \sqrt{6} \quad \text{and length} = \frac{9}{\sqrt{2}}$$

Find the volume of the shed.
Give your answer in the form $a\sqrt{15}$, where a is an integer.

.....m^3

(3)