

SURDS

①

21. Express $\sqrt{180}$ in the form $a\sqrt{b}$, where a is a whole number and b is a prime number.

.....

.....

.....

.....

[2]

②

(b) Express $\sqrt{192}$ in the form $a\sqrt{b}$, where a is a whole number and b is a prime number.

.....

.....

.....

.....

[2]

③

(c) Simplify $(\sqrt{3} + \sqrt{5})^2 - 8$, expressing your answer in surd form.

.....

.....

.....

.....

[2]

④

12. (a) Find the value of $(\sqrt{45} - \sqrt{5})^2$.

.....

.....

.....

LAH111111
only

[2]

⑤

(c) Evaluate $(\sqrt{72} - \sqrt{2})^2$.

.....

.....

.....

.....

.....

[3]



6

(c) Simplify $(3 - 5\sqrt{2})^2$ and state whether your answer is rational or irrational.

.....

.....

.....

.....

.....

.....

.....

.....

[3]

7

22. (a) Expand $(5 + 3\sqrt{2})^2$. Simplify your answer.

.....

.....

.....

.....

.....

8

(c) Find the value of $(\sqrt{50} - \sqrt{2})^2$.

.....

.....

[2]

[2]

yn unig

9

20. (a) Find the value of $(\sqrt{32} - \sqrt{2})^2$.

.....

.....

[3]

10

(b) Given that $p = \sqrt{7}$, $q = \sqrt{11}$ and $r = \sqrt{154}$, simplify pqr .

.....

.....

.....

.....

.....

[2]

(b) Given that $p = \sqrt{5}$, $q = \sqrt{13}$ and $r = \sqrt{325}$, simplify pqr .

11

[2]

25. Given that $f = \sqrt{2}$, $g = \sqrt{3}$ and $h = \sqrt{6}$, find in the simplest form,

12

(a) $\frac{fh}{g}$,

[1]

13

(b) $fg + 2h$.

[1]

14

(c) Given that $f = \sqrt{2}$, $g = \sqrt{5}$ and $h = \sqrt{10}$, find, in its simplest form,

(i) $\frac{fg}{h}$,

[1]

15

(ii) $fg + h$,

[1]

16

(iii) fh .

[1]

21. Given that $a = \sqrt{5}$, $b = \sqrt{7}$ and $c = \sqrt{35}$, simplify abc and state whether your answer is rational or irrational.

[2]

- (c) Given that $a = \sqrt{5}$, $b = \sqrt{7}$ and $c = \sqrt{70}$, find the value of abc .

Write your answer in the form $n\sqrt{2}$ where n is a whole number.

[2]