A33...Factorising Quadratics...Diff of two squares

OCR

15 (a) Simplify.

$$a^3b \times a^2b^3$$

(a) .... **[1]**

(b) Factorise.

$$x^2 - 36$$

(b) .... **[1]**

18 (a) Factorise.

$$x^2 - 43^2$$

(a) .... **[1]**

(b) Calculate.

$$57^2 - 43^2$$

(b) .... **[2]**

18 (a) Factorise.

$$x^2 - 43^2$$

$$(x + 43)(x - 43)$$

(a) .... **[1]**

(b) Calculate.

$$57^2 - 43^2 \checkmark$$

$$(57 + 43)(57 - 43)$$

$$(100)(14)$$

$$1400$$

```
  57          43
 x57         x 43   ✓
 ────        ────
 399         129
28,50        172 0
────         ────
3249         1849
```

$$
\begin{array}{r}
3249 \\
1849 \\
\hline
1400
\end{array}
$$

(b) ....1400.................. **[2]**

15 **(a)** Simplify.

$$a^3b \times a^2b^3$$

$a^3 \times a^2 = a^5$
$b \times b^3 = b^4$

(a) a^5b^4 .... [1]

(b) Factorise.

$$x^2 - 36$$

$(x+6)(x-6)$

(b) .... [1]

Edexcel

27 (a) Factorise $m^2 - 9$

A33

....

(1)

(b) Expand and simplify $(x + 3)(2x - 5)$

A30

....

(2)

(b) Factorise $x^2 + 4x + 3$

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$$(x+3)(x+1)$$

$$(x+1)(x+3)$$

(2)

3

$+3 \qquad +1 \qquad =+4$

17 $x^2 - 9y^2 = 0$ where $x > 0$ and $y > 0$

(a) Work out the ratio $x : y$

(3)

17 $x^2 - 9y^2 = 0$ where $x > 0$ and $y > 0$

(a) Work out the ratio $x : y$

$$(x + 3y)(x - 3y) = 0$$

~~$x = -3y$~~   or $x = 3y$ ✓

$$x : y$$
$$3 : 1$$

(3)

15 (a) Factorise $a^2 - b^2$

A33

....

(1)

(b) Hence, or otherwise, simplify fully $(x^2 + 4)^2 - (x^2 - 2)^2$

A33
A30

....

(3)

15 (a) Factorise $a^2 - b^2$

A33

$8x^2 -- 4x^2$
$+$

$(a+b)(a-b)$

(1)

(b) Hence, or otherwise, simplify fully $(x^2 + 4)^2 - (x^2 - 2)^2$

A33
A30 $(x^2+4)(x^2+4)$ $\qquad$ $(x^2-2)(x^2-2)$

$x^4 + 4x^2 + 4x^2 + 16$ $\qquad$ $x^4 - 2x^2 - 2x^2 + 4$

$\left[x^4 + 8x^2 + 16\right]$ $-$ $\left[x^4 - 4x^2 + 4\right]$

(3)

$12x^2 + 12$ $\checkmark$ $= 12(x^2 + 1)$ $\checkmark$

(b) Factorise fully $50 - 2y^2$

A33

....

(2)

(Total for Question 10 is 3 marks)

(b) Factorise fully $50 - 2y^2$

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$2\left(25 - y^2\right)$

$2\left(5 + y\right)\left(5 - y\right)$ ✓

(2)

(Total for Question 10 is 3 marks)

31 (a)   Factorise $x^2 - 100$

A33

[1 mark]

_____

Answer _____

31 (a)   Factorise $x^2 - 100$

A33

[1 mark]

Answer $(x + 10)(x - 10)$