

Y8 Ch8 Quadratics etc. TT

35 marks from 35 questions

Question 1

$$n(n - 4) + 2(n - 4) = n^2 - 4n + \square n - 8$$

Question 2

$$(x + 2)(x - 6) =$$

- a. ☐ $x^2 - 8x + 12$
 - b. ☐ $x^2 + 8x - 12$
 - c. ☐ $x^2 - 4x - 12$
 - d. ☐ $x^2 + 4x + 12$
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Question 3

The factor $(x - 3)$ is multiplied by another binomial factor to give the expression $3x^2 - 7x - 6$.
What is the other factor?

- a. ☐ $(x - 2)$
 - b. ☐ $(x + 2)$
 - c. ☐ $(3x + 2)$
 - d. ☐ $(3x - 2)$
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Question 4

Complete the expansion:

$$(y + 7)(y - 7) = y^2 - \square$$

Question 5

$$(x + 9)^2 =$$

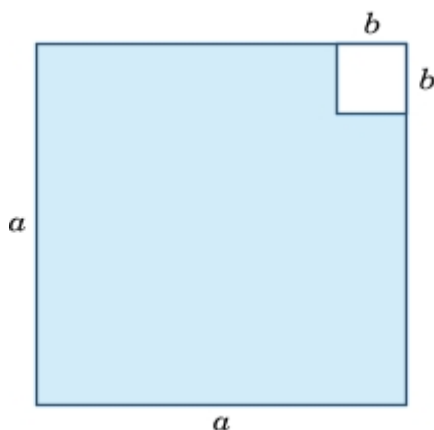
- a. ☐ $x^2 + 9x + 9$
 - b. ☐ $x^2 + 18x + 9$
 - c. ☐ $x^2 + 9x + 81$
 - d. ☐ $x^2 + 18x + 81$
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Question 6

Complete the expansion by entering the missing coefficients:

$$(5x - 3y)^2 = \square x^2 - \square xy + \square y^2$$

Question 7



$$a = (x + 3) \text{ units}$$

$$b = (x - 3) \text{ units}$$

$$\text{shaded area} = 72 \text{ units}^2$$

Find the value of x .

$$x = \square \text{ units}$$

Question 8

Complete the factorisation:

$$12b + 24 = \square(b + 2)$$

Question 9

Common factors in $18uv^4 - 6uv$ can be combinations of numerals and variables.

The highest common factor is $\square$.

Question 10

Expansions in the form $A^2 - B^2$ are called:

- a. ☐ perfect squares
 - b. ☐ factorised form
 - c. ☐ letter squares
 - d. ☐ difference of two squares
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Question 11

Enter the correct sign to complete the factorisation:

$$25n^2 - 64 = (5n \square 8)(5n - 8)$$

Question 12

$$x^2 - 1 = (\square - \square)(\square + \square)$$

Question 13

Complete the factorisation:

$$\begin{aligned} 6z^3 - 24z &= 6z(z^2 - \square) \\ &= 6z(\square + \square)(\square - \square) \end{aligned}$$

Question 14

True or false?

$$n(-3m + 4) = -n(3m - 4)$$

- a. ☐ True
b. ☐ False
-

Question 15

What is the highest common factor for all terms in $12w^2 - 24w + 30$?

Highest common factor =

Question 16

$$2kx - 3k + 15 - 10x$$

The factored form of this expression is:

- a. ☐ $(2x + 3)(k - 5)$
b. ☐ $(2x - 3)(k + 5)$
c. ☐ $(3 - 2x)(k - 5)$
d. ☐ $(2x - 3)(k - 5)$
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Question 17

Simplify this fraction by first factorising the numerator.

$$\frac{4x^3 + 24x}{x^2 + 6} = \square$$

Question 18

$p^2 - 10p + 25$ can be written as $p^2 - 5p - 5p + 25$.

Select the fully factored form of this expression.

- a. $\bigcirc (p - 5)(p + 5)$
 - b. $\bigcirc (5 - p)(p + 5)$
 - c. $\bigcirc (p - 5)^2$
 - d. $\bigcirc (p + 5)^2$
-

Question 19

Factorise $x^2 + 9x + 8$.

(Enter the smaller number first.)

$$x^2 + 9x + 8 = (x + \square)(x + \square)$$

Question 20

Factorise $n^2 - 12n - 45$.

$$n^2 - 12n - 45 = (n - \square)(n + \square)$$

Question 21

Factorise $4x^2 - 24x + 36$.

$$4x^2 - 24x + 36 = \square(x - \square)^2$$

Question 22

True or false?

To factorise $6y^2 + 29y + 28$ you first need to find numbers that multiply to give +28 and add to give 29.

- a. $\bigcirc$ True
 - b. $\bigcirc$ False
-

Question 23

Factorise $4n^2 - 7n - 30$.

$$4n^2 - 7n - 30 = (\text{ } x + \text{ })(\text{ } x - \text{ })$$

Question 24

Factorise $8y^2 - 2y - 15$.

Note: The *signs* have already been included.

$$8y^2 - 2y - 15 = (4y + \text{ })(2y - \text{ })$$

Question 25

Select the factor that can be used to simplify:

$$\frac{(m+5)(m-2)}{m} \times \frac{4m}{3(m+5)}$$

a. $\bigcirc (m-2)$

b. $\bigcirc (m+5)$

Question 26

Simplify this fraction fully.

$$\frac{m^2 - 16}{m - 4} \times \frac{7}{m + 4} = \frac{(m-4)(m+4)}{m-4} \times \frac{7}{m+4} = \text{ }$$

Question 27

Simplify $\frac{x^2 - 5x - 14}{x + 2} = \text{ }$

Question 28

Simplify $\frac{3x(x-3)}{(x+2)} \div \frac{(x-3)}{(x+2)} = \text{ }$

Question 29

Write the answer as a single fraction in its simplest form.

$$\frac{7m}{8} - \frac{m}{5} = \frac{\text{ }}{\text{ }}$$

Question 30

Write the answer as a single fraction in its simplest form.

$$\frac{3t}{7} + \frac{t}{3} = \frac{\boxed{}}{\boxed{}}$$

Question 31

Simplify

$$\frac{3}{2x+5} - \frac{2}{3x+4} = \frac{\boxed{}x + \boxed{}}{(2x+5)(3x+4)}$$

Question 32

$$\frac{w-4}{3} + 5 = 6$$

Solve for w .

$$w = \boxed{}$$

Question 33

$$\frac{y-1}{4} - \frac{2y+5}{3} = \frac{1}{6}$$

Solve for y .

$$y = \boxed{}$$

Question 34

$$\text{Solve } \frac{x+6}{8} = \frac{x-2}{2}$$

$$x = \frac{\boxed{}}{\boxed{}}$$

Question 35

$$\frac{3n+4}{2} - \frac{n-1}{3} = \frac{2n+3}{4}$$

Solve for n .

$$n = -\frac{\boxed{}}{\boxed{}} \text{ (in simplest terms)}$$
