Mathematics Department

A Level Maths

WYKE START BRIDGING WORK

Name:

Teacher:

Questions that you need support with:

Q1.

Simplify fully $(8x^3y^5)^2$

(Total 2 marks)

Q2.

Circle the expression that is equivalent to $(4a^5)^2$

$16a^{10}$ $16a^7$ $8a^{10}$ $8a^7$

(Total 1 mark)

Q3.

Circle the expression that is equivalent to $\frac{2x^2+1}{x}$ where x is not equal to 0

$2x+1$ $2x^2+\frac{1}{2}$ $2x+\frac{1}{x}$ $4x+\frac{1}{x}$

(Total 1 mark)

Q4.

Rearrange $p = r + 3$ to make r the subject.
Circle your answer.

$r = p + 3$ $r = p - 3$ $r = 3 - p$ $r = \frac{p}{3}$

(Total 1 mark)

Q5.

Rearrange $y = \frac{x}{3} + 9$ to make x the subject.

(Total 2 marks)

Q6.

Make y the subject of $x = \frac{5y+4}{2y-3}$

(Total 4 marks)

Q7.

Multiply out and simplify $(x-8)^2$

(Total 2 marks)

Q8.

(a) Factorise $x^2 - 100$

(1)

(b) Solve $7x + 6 > 1 + 2x$

(2)

(Total 3 marks)

Q9.

(a) Factorise $x^2 - y^2$

(1)

(b) Solve $\frac{2x}{5} + 1 = 13$

(3)

(Total 4 marks)

Q10.

(a) Write $x^2 - 10x + 12$ in the form $(x - a)^2 + b$ where a and b are integers.

(2)

(b) When $(x - 2)^2 + 7$ has a minimum value, what is the value of x?

Circle your answer.

−2 2 7 11

(1)

(Total 3 marks)

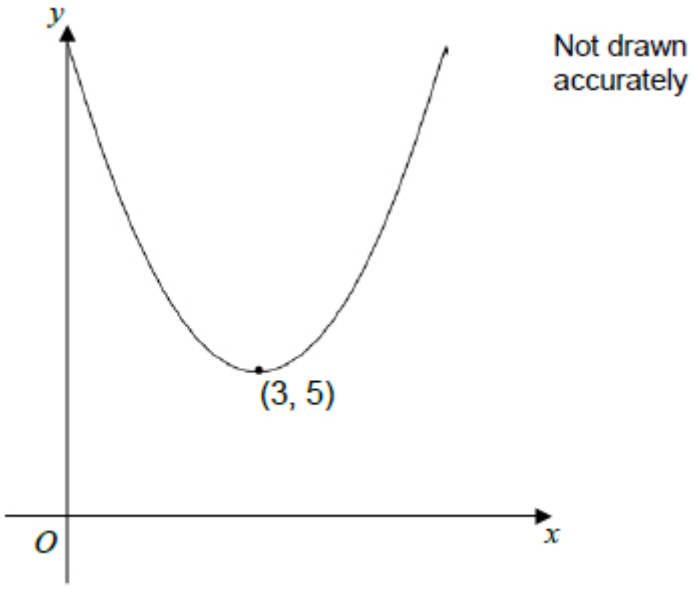
Q11.

(a) Write $x^2 - 10x + 29$ in the form $(x - a)^2 + b$ where a and b are integers.

(2)

(b) A sketch of $y = x^2 + cx + d$ is shown.

The turning point is (3, 5)



Work out the values of c and d.

(3)

(Total 5 marks)

Q12.

Circle the expression equivalent to $x^2 - 4x - 12$

$(x - 4)(x - 8)$ $(x + 3)(x - 4)$ $(x - 12)(x + 1)$ $(x + 2)(x - 6)$

(Total 1 mark)

Q13.

Circle the **two** roots of $(2x + 3)(5x - 2) = 0$

$-\frac{3}{2}$ $-\frac{2}{5}$ $\frac{2}{5}$ $\frac{3}{2}$

(Total 1 mark)

Q14.

(a) Expand and simplify $(6x - 1)(2x + 3)$

(2)

(b) Solve $4x^2 + x - 3 = 0$

(3)

(Total 5 marks)

Q15.

Solve $5x^2 = 10x + 4$

Give your answers to 2 decimal places.

(Total 4 marks)

Q16.

Solve the simultaneous equations.

$2x + y = 18$

$x - y = 6$

(Total 3 marks)

Q17.

$2x + 3y = 15.5$

$x + y = 6$

Work out the values of x and y.

(Total 3 marks)

Q18.

Use algebra to work out the x-coordinates of the points of intersection of

$y = 3x^2$

and $y = 4x + 2$

Give your answers to 1 decimal place.

(Total 5 marks)

Q19.

Solve $5x - y = 5$

$2y - x^2 = 11$

You **must** show your working. Do **not** use trial and improvement.

(Total 6 marks)

Q20.

(a) Solve $\frac{y-3}{6} = 4$

(3)

(b) Solve $4x^2 - 25 < 0$

(3)

(c) Solve $\frac{1}{y-6} = 5$

(3)

(Total 9 marks)

Q21.

Show that $\frac{2x+1}{3} + \frac{5x-2}{2}$ simplifies to $\frac{19x-4}{6}$

(Total 2 marks)

Q22.

Solve $\frac{x}{4} - \frac{2x}{x+2} = 1$

Give your solutions to 2 decimal places. You **must** show your working.

(Total 6 marks)