

Name: _____

Entrance algebra

Date:

Time:

Total marks available:

Total marks achieved: _____

Questions

Q1.

(a) Write $\frac{x+3}{5} + \frac{x-2}{3}$ as a single fraction in its simplest form.

.....
(3)

(b) Simplify $(8a^9e^6)^{\frac{1}{3}}$

.....
(2)

(Total for question = 5 marks)

Q2.

(a) Simplify n^0

(1)

(b) Factorise fully $2e^2 - 18$

(2)

(c) Make r the subject of $m = \sqrt{\frac{6a+r}{5r}}$

(4)

(Total for question = 7 marks)

Q3.

Make t the subject of $5(t - g) = 2t + 7$

.....
(Total for question = 3 marks)

Q4.

A is the point with coordinates $(1, 3)$

B is the point with coordinates $(-2, -1)$

The line L has equation $3y = 4 - 2x$

Is line L parallel to AB ?

Show your working clearly.

(Total for question = 3 marks)

Q5.

(a) $y = 2x^3 + 3x^2 + 2$

Find $\frac{dy}{dx}$

.....
(2)

(Total for Question is 2 marks)

Q6.

Simplify fully $(2x + 3)^2 - (2x - 3)^2$

.....
(Total for question = 3 marks)

Q7.

(a) Factorise $x^2 + x - 30$

.....
(2)

(b) Make b the subject of $P = \frac{1}{2}ab^2$

$$b = \dots\dots\dots$$

(2)

(c) Solve $\frac{2x+1}{3} + \frac{x-5}{2} = 4$

Show clear algebraic working.

$$x = \dots\dots\dots$$

(4)

(Total for question = 8 marks)

Q8.(a) Solve $3x + 4y = 5$
 $2x - 5y = 11$

$$x = \dots\dots\dots$$
$$y = \dots\dots\dots$$

(4)

(b) Solve $2x^2 - 7x - 6 = 0$

Give your answers correct to 3 significant figures.

$$x = \dots\dots\dots$$

(3)

(Total for question = 7 marks)