AQA Level 2 Further mathematics Number & algebra

Section 2: Algebraic manipulation

Section test

1) The expression $8x^2y^3 - 4x^3y^4 - 2x^2y$ can be written in fully factorised form as

(a) $2x^2y\left(4y^2 - 2xy^3 - 1\right)$
(b) $2x^2y\left(4y^2 - 2xy^3\right)$
(c) $xy\left(8y^2 - 4xy^3 - 2\right)$
(d) $2x^2y\left(6y^2 - 2xy^3 - 1\right)$
(e) I don't know

2) The expression $\dfrac{y^2 - 1}{y^2 - y - 2}$ can be simplified to

(a) $\dfrac{y+1}{y+2}$
(b) $\dfrac{y-1}{y-2}$
(c) $\dfrac{1}{y+2}$
(d) cannot be simplified
(e) I don't know

3) $\dfrac{2x}{3y^3} \times \dfrac{6y}{x^2 + 2x}$, expressed in its simplest form, is

(a) $\dfrac{2}{x^2y^2}$
(b) $\dfrac{4}{y^2(x+2)}$
(c) $\dfrac{4}{x^2}$
(d) $\dfrac{4}{x^2y^2 + 2}$
(e) I don't know

4) $\dfrac{x^2y}{2z} \div \dfrac{3xy^3}{10z^2}$, expressed in its simplest form, is

(a) $\dfrac{3x^3y^4}{20z^3}$
(b) $\dfrac{8xz}{3y^2}$
(c) $\dfrac{5xz}{3y^2}$
(d) $\dfrac{3y^2}{5xz}$
(e) I don't know

AQA FM Number and algebra 2 section test

5) $\frac{5}{x+2}-\frac{3}{2x-1}=$

(a) $\frac{7x-7}{(x+2)(2x-1)}$

(b) $\frac{7x+1}{(x+2)(2x-1)}$

(c) $\frac{7x-11}{(x+2)(2x-1)}$

(d) $\frac{2}{(x+2)(2x-1)}$

(e) I don't know

6) Make u the subject of the formula $s=\frac{1}{2}(u+v)t$.

(a) $u=2\left(\frac{s-v}{t}\right)$

(b) $u=\frac{2s-v}{t}$

(c) $u=2\left(\frac{s}{t}-v\right)$

(d) $u=\frac{2s}{t}-v$

(e) I don't know

7) Make x the subject of the formula $g=\frac{1}{\sqrt{a^2-x^2}}$

(a) $x=\sqrt{\frac{1}{g^2}-a^2}$

(b) $x=\sqrt{\frac{a^2-1}{g^2}}$

(c) $x=\sqrt{a^2-\frac{1}{g^2}}$

(d) $x=\sqrt{\frac{1-a^2}{g^2}}$

(e) I don't know

8) Make a the subject of the formula $b=\frac{a+x}{a+c}$

(a) $a=\frac{bc-x}{b-1}$

(b) $a=\frac{x-bc}{b-1}$

(c) $a=\frac{x-bc}{b+1}$

(d) $a=\frac{bc-x}{b+1}$

(e) I don't know

9) The quadratic expression x^2-2x-3 can be written in the form

(a) $(x+1)^2-4$

(b) $(x-1)^2-4$

(c) $(x-1)^2-3$

(d) $(x-1)^2-2$

(e) I don't know

AQA FM Number and algebra 2 section test

10) The quadratic expression $2x^2 + 6x + 1$ can be written in the form

(a) $2(x+\frac{3}{2})^2 - \frac{7}{2}$

(b) $2(x + 3)^2 - 8$

(c) $(2x + 3)^2 - 8$

(d) $(2x+\frac{3}{2})^2 - \frac{5}{4}$

(e) I don't know