UNIT 5 :
Formulas

Level 1

1 If $A = xy + yz + zx$, $x = 2$, $y = 3$ and $z = 4$, $A =$

A 22 B 24 C 26 D 28 E 30

2 If $2p + 5q = 7r$, $p = 1$ and $r = 2$, $q =$

A 2.2 B 2.4 C 3 D 6 E 12

3 If $y = mx + c$, $m =$

A $y - cx$

B $y - \frac{c}{x}$

C $xy + c$

D $\frac{y - c}{x}$

E $\frac{c}{x} - y$

4 If $\frac{a}{b} = \frac{x}{1+x}$, express x in terms of a and b.

A $\frac{a}{1+b}$

B $\frac{ab}{1+ab}$

C $\frac{b}{b-a}$

D $\frac{a}{a-b}$

E $\frac{a}{b-a}$

5 Make h the subject of the formula $V = \frac{1}{3}\pi r^2 h$.

A $h = \frac{3V}{\pi r^2}$

B $h = \frac{V}{\pi r^2}$

C $h = \frac{3V\pi}{r^2}$

D $h = \frac{\pi r^2}{3V}$

E $h = \frac{V}{3\pi r^2}$

6 If $\frac{1}{a}+\frac{1}{b}=\frac{1}{c}$, $a=$

A $\frac{1}{c}-\frac{1}{b}$

B $\frac{bc}{b-c}$

C $\frac{bc}{c-b}$

D $\frac{c-b}{bc}$

E $\frac{b+c}{bc}$

[7] If $E=mc^2$, $c=$

A $\frac{E}{m}$ B mE^2 C $\pm\sqrt{\frac{m}{E}}$ D $\pm\sqrt{\frac{E}{m}}$ E $\pm\sqrt{Em}$

Level 2

8 If $a=\frac{b+c}{b-2c}$, $c=$

A $\frac{b(a-1)}{2a+1}$

B $\frac{b(1-a)}{2a+1}$

C $\frac{b-a}{2a+1}$

D $\frac{b(a-1)}{2a-1}$

E $\frac{b(2a+1)}{a-1}$

9 Given that $p=\pi x^2+1$, find x when $p=4\pi+1$.

A 4 B 3 C 2 D 1 E 2 or -2

10 If $b=1-\frac{1}{1-a}$, $a=$

A $1-\frac{1}{1+b}$

B $1-\frac{1}{b-1}$

C $1-\frac{1}{1-b}$

D $1+\frac{1}{2b-1}$

E $1+\frac{1}{1-2b}$

11 If $\frac{1}{1+x}+\frac{y}{1+y}=y$, $x=$

A $1-\frac{1+y}{y^2}$

B $\frac{1+y}{y^2}-1$

C $\frac{1+y}{y^2}+1$

D $\frac{1-y}{y^2}-1$

E $\frac{1-y}{y^2}+1$

12 If $x=2t+1$ and $y=3t-2$, express y in terms of x.

A $\frac{3x+7}{2}$

B $\frac{2x+7}{3}$

C $\frac{3x}{2}-3$

D $\frac{3x-7}{2}$

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

13 If $x=2at$ and $y=at^2$, express y in terms of x.

A $\frac{4a}{x^2}$ B $4ax$ C $4ax^2$ D $\frac{x^2}{4a^2}$ E $\frac{x^2}{4a}$

[14] If $(x-1)^2=y+1$, $x=$

A $\pm\sqrt{y+1}+1$

B $\pm\sqrt{y+1}-1$

C $\pm\sqrt{y-1}+1$

D $\pm\sqrt{y-1}-1$

E $\pm\sqrt{y}$

[15] If $x=\frac{-1+\sqrt{1-4a}}{2}$, express a in terms of x.

A $1-\frac{(2x-1)^2}{4}$

B $1-\frac{(2x+1)^2}{4}$

C $\frac{1-(2x+1)^2}{4}$

D $\frac{1-(2x-1)^2}{4}$

E $\frac{(2x+1)^2-1}{4}$

[16] If $\sqrt{\frac{a}{a+b}} = \frac{1}{a+b}$, express b in terms of a.

A $\frac{a}{1-a}$

B $\frac{1-a^2}{a}$

C $\frac{a^2}{1+a}$

D $\frac{a^2}{a-1}$

E $\frac{a^2}{1-a}$

[17] If $x^3 + y^3 = (xz)^3$, $x =$

A $\sqrt[3]{z^3 - y^3}$

B $\frac{y}{\sqrt[3]{z^3 - 1}}$

C $\frac{y}{\sqrt[3]{1 - z^3}}$

D $\frac{y}{\sqrt[3]{1 + z^3}}$

E $\frac{\sqrt[3]{z^3 - 1}}{y}$