(10.) Transpose, and $x^2-2xy+y^2+y^2-2yz+z^2+z^2-2uz+u^2=(x-y)^2+(y-z)^2+(z+u)^2$. Since the square of any quantity is positive, $\therefore$ each expression is positive, and cannot be zero unless each quantity is zero, $\therefore x-y=0$, $y-z=0$, $z-u=0$, $\therefore x=y=z=u$.

EXERCISE XXIV.

(1.) $a^3-8a^2+23a-26$. (2.) . (3.) . (4.) .

Page 53. (5.) 29 miles. (6.) $\frac{1}{x}$. (7.) . (8.) .

(9.) $x^2-(a+b)x+ab=x^2+x+1$. Since co-efficients of like powers are equal, $\therefore a+b=-1$ and $ab=1$, $\therefore a^3+b^3=2$.

(10.) $a+b=-c$, multiply by $a-b$, etc.

EXERCISE XXV.

(1.) . (2.) $x=6$. (3.) $\frac{1}{abc}$. (4.) $x=\frac{13a}{2}$.

(5.) $a=8$. (6.) $\frac{x}{3-x}$. (7.) $5x^2-2x-1$. (8.) $x=10$.

(9.) Let $x-3$, $x-1$, $x+1$, $x+3$, be the numbers, etc.

(10.) .

EXERCISE XXVI.

Page 54. (1.) $x=10a$. (2.) Let $x=$one, $x+d$ the other, etc.

(3.) $\frac{b^2+c^2-a^2}{2bc}+1=m+1$, etc. (4.) 216.

(5.) $a^3+2a^2b-ab^2-2b^3$. (6.) $m^2-12m+35$.

(7.) $(x^2-3x+17)(x^2+3x+17)$.

(8.) x^2-3x+2 is a factor and $=0$, $\therefore$ expression $=0$.

(9.) Write $\left(1-\frac{1}{a}+1-\frac{1}{b}+1-\frac{1}{c}-1\right)\div 2-\left(\frac{1}{a}+\frac{1}{b}+\frac{1}{c}\right)$, etc., $=1$. (10.) .

EXERCISE XXVII.

(1.) Factor the expression. (2.) $\frac{4x^2+2x-1}{3x+1}$.

(3.) . (4.) . (5.) $\frac{1}{2}a+\frac{3}{2}b-\frac{1}{2}c$.

(6.) . (7.) $\frac{1}{19}\frac{3}{9}$.

Page 55. (8.) 6. (9.) 405 yards. (10.) $x=a+b+c$.