(30.) $R=31$. (31.) $(3ax+x+a)(ax-2x+a+2)$.

(32.) $(x^2+2xy-y^2)(x^2+xy+y^2)(x^2-xy+y^2)$.

(33.) Divide by Horner's method and the remainder will be the value, divisor $=2x^2-3x+4$, answer $=10$.

(34.) . (35.) . (36.) 4. (37.) $x=\frac{38}{41}$.

Page 79. (38.) $a=16$. (39.) $4x-12+\frac{9}{x}$.

(40.) Reduce to mixed numbers and equate remainders in lowest terms, $x=2\frac{1}{2}$. (41.) $6x+3$.

(42.) $a=1$; $\frac{x^2+1}{(x+1)^2}$. (43.) $4x-5$. (44.) $m=6$ or $\frac{2}{3}$.

(45.) Reduce to mixed numbers, etc., $x=10$.

(46.) x^2-x+1.

(47.) See page 52, Ex. xxiii, question 10, etc.

(48.) $x^8+2x^6+3x^4+2x^2+1$. (49.) $x=-4$.

(50.) $(x+a)(x-b)(x-1)$. (51.) 35. (52.) 0, 0.

(53.) $4a^2b^2$. (54.) 1. (55.) $(x^m-y^n)(x^{2m}+x^m y^n+y^{2n})$.

(56.) Divide by $(x-2)(x-5)$ and remainder is zero, $\therefore$ $a=74$, $b=120$.

Page 80. (57.) $a=0$, $b=-36$. (58.) .

(59.) Reduce 1st $=n$, $xz+xy=2yz$, divide by xyz, etc.

(60.) The former. (61.) $x=-\frac{1}{4}$.

(62.) $8x^2-4x-\frac{7}{4}$. (63.) 16.

(64.) $(a+b+c)^3=a^3+b^3+c^3+3(ab+bc+ca)(a+b+c)-3abc$, $\therefore$ $(a+b+c)^3=a^3+b^3+c^3-3abc$ since $ab+bc+ca=0$. (65.) .

(66.) Expression $=17x(x-y)^4$, $\therefore$ to make a complete cube we must multiply by $289x^2(x-y)^2$. (67.) .

(68.) Multiply by xyz, re-arrange terms and divide by abc, etc.

(69.) Write expression $\frac{b^2+c^2-a^2}{2bc}-1+\frac{c^2+a^2-b^2}{2ac}+1+\frac{a^2+b^2-c^2}{2ab}-1=0$, simplify, etc.

(70.) Reduce to form $a^3b^3+a^3c^3+b^3c^3=abc^4$, + etc., and divide by $a^3b^3c^3$, etc.

(71.) $\frac{z(x^2-y^2)}{xy}=a-b$, $\frac{x(y^2-z^2)}{yz}=b-c$; $\therefore$, etc.

(72.) See page 52, Ex. xxiii, question 10. (73.) 3.

Page 81. (74.) Factor expression, $\therefore$ factor required is $x-3$.

(75.) $x-7$. (76.) .

(77.) $(a^2+b^2)(c^2+d^2)=$, etc. (78.) .