 ชื่อ-นามสกุล Realor เลขประจำตัว $\quad$ No 2

## แบบฝึกหัดเรื่อง Real Number

1. กำหนด $p(x)=5 x^{5}-c x^{3}+2 x^{4}+2 x^{2}$

$$
q(x)=2 x^{2}-4 x^{3}+5 x^{5}+2 x^{4}+a x-b \quad \text { ถ้า } p(x)=q(x) \text { จงหาค่า } a, b \text { และ } c
$$

ตอบ $a=\ldots \quad b=$
2. กำหนด $p(x)=x^{2}-1, q(x)=2 x^{2}-x+3$,

$$
m=3
$$

2.1) $p(x)+q(x)=$
$=\left(x^{2}-1\right)+\left(2 x^{2}-x+3\right)$
$=3 x^{2}-x+2$
2.3) $q(x)-p(x)=$
$=\left(2 x^{2}-x+3\right)-\left(x^{2}-1\right)$
$=x^{2}-x+4$
2.5) $p(x) \cdot q(x)=$
$=\left(x^{2}-1\right)\left(2 x^{2}-x+3\right)$
$=2 x^{4}-x^{3}+3 x^{2}-2 x^{2}+x-3$
$=2 x^{4}-x^{3}+x^{2}+x-3$
3. กำหนด $p(x)=x^{3}+2 x-5$, $q(x)=x^{2}+2 x+4$

จงหา $p(x) \cdot q(x)$
$=\left(x^{3}+2 x-5\right)\left(x^{2}+2 x+4\right)$
$=x^{5}+2 x^{4}+4 x^{3}+2 x^{3}+4 x^{2}+8 x-5 x^{2}-10 x-20$
ตอบ $p(x) \cdot q(x)=x^{5}+2 x^{4}+6 x^{3}-x^{2}-2 x-20$
4. ถ้า $E q: x^{2}-6 x+8=(x-a)(x-b)$ จงหา (1) $a+b$ (2 $a b$

$$
x^{2}-6 x+8=x^{2}-(a+b) x+a b
$$

$\qquad$ (2) $a b=$ $\qquad$
5. ถ้า $E q: x^{2}+4 x+53=(x-a)^{2}+b^{2}$

개ํ $b>0$ จงm $a$ © $b$ ( $a b$

وอu (1) $a=-2 \quad 0 b=-7$
(3) $a b=-14$
6. กำหนด $D(x)=x^{2}-3 x$, $Q(x)=x^{2}+5$ และ $R(x)=3 x-2$ จงหาพหุนาม $P(x)$ ที่เมื่อหารด้วย $D(x)$ แล้วได้ผลหารคือ $Q(x)$ และเศษเหลือคือ $R(x)$
$\frac{R(x)}{D(x)}=Q(x)+\frac{R(x)}{D(x)}$
$p(x)=\left(x^{2}+5\right)\left(x^{2}-3 x\right)+3 x-2$
$P(x)=Q(x) D(x)+R(x)$
คอบ $P(x)=$
$-\cdots$
$x^{4}-3 x^{3}+5 x^{2}-12 x-2$
7. จงหาผลหาร $Q(x)$ และเศษหลือ $R(x)$ จากการหารพหุนาม $a(x)$ ต้วยพหุนาม $b(x)$

$$
\begin{aligned}
& \text { 7.1) } a(x)=x^{5}+3 x^{4}-2 x^{3}-4 x^{2}+3 \\
& b(x)=x^{2} \\
& \frac{a(x)}{b(x)}=x^{3}+3 x^{2}-2 x-4+\frac{3}{x^{2}}
\end{aligned}
$$

$$
\text { ตอบ } Q(x)=x^{3}+3 x^{2}-2 x-4
$$

$$
R(x)=3
$$

$$
\text { 7.3) } a(x)=x^{3}-1
$$

$$
b(x)=x^{2}+4
$$

$$
\frac{a(x)}{b(x)}=\frac{x\left(x^{2}+4\right)-4 x-1}{x^{2}+4}
$$

$$
=x+\frac{-4 x-1}{x^{2}+4}
$$

ตอบ $Q(x)=\ldots x$

$$
R(x)=-4 x-1
$$

7.5) | $a(x)$ | $=3 x^{5}-4$ |
| ---: | :--- |
| $b(x)$ | $=x^{2}-3$ |

$$
\frac{a(x)}{b(x)}=\frac{3 x^{3}\left(x^{2}-3\right)+9 x\left(x^{2}-3\right)+27 x-4}{x^{2}-3}
$$

$$
=3 x^{3}+9 x+\frac{27 x-4}{x^{2}-3}
$$

$$
\text { ตอบ } Q(x)=3 x^{3}+9 x
$$

$$
R(x)=-27 x-4
$$

7.2) $a(x)=x^{5}+3 x^{4}-2 x^{3}-4 x^{2}+3$

$$
b(x)=x^{4}
$$

$$
\frac{a(x)}{b(x)}=x+3+\frac{-2 x^{3}-4 x^{2}+3}{x^{4}}
$$

- ตอบ $Q(x)=\ldots x+3$

$$
R(x)=-2 x^{3}-4 x^{2}+3
$$

7.4) $a(x)=x^{4}+x^{3}+2 x-1$

$$
b(x)=x-2
$$

$\frac{a(x)}{b(x)}=\frac{x^{3}(x-2)+3 x^{2}(x-2)+6 x(x-2)+14 x-1}{x-2}$

$$
\begin{aligned}
& =x^{3}+3 x^{2}+6 x+\frac{14(x-2)+24}{x-2 x^{x-2}} \\
& =x^{3}+3 x^{2}+6 x+14+\frac{14}{x-2}
\end{aligned}
$$

$$
\text { ตอบ } Q(x)=-x^{3}+3 x^{2}+6 x+14
$$

$$
R(x)=27
$$

7.6) $a(x)=x^{6}+5 x^{3}-3$

$$
b(x)=x^{3}+3
$$

$\frac{a(x)}{b(x)}=\frac{x^{3}\left(x^{3}+3\right)+2\left(x^{3}+3\right)-9}{x^{3}+3}$

$$
=x^{3}+2+\frac{-9}{x^{3}+3}
$$

ตอบ $Q(x)=-x^{3}+2$
$R(x)=-9$

$$
\begin{aligned}
& x^{2}+4 x+53=x^{2}-2 a x+a^{2}+b^{2} \text { Qी月 }-2 a=4 \quad \text { N. } \quad a^{2}+b^{2}=53 \\
& \begin{array}{ll}
a=-2 & b^{2} \\
b & =53-4=49
\end{array}
\end{aligned}
$$ Real01 for No. 2

$$
\begin{aligned}
& \text { No01 }=\left[\begin{array}{c}
\mathrm{p}(x)=5 x^{5}-c x^{3}+2 x^{4}+2 x^{2} \\
\mathrm{q}(x)=2 x^{2}-4 x^{3}+5 x^{5}+2 x^{4}+a x-b
\end{array}\right] \\
& \text { No02 }=\left[\begin{array}{c}
\mathrm{p}(x)=x^{2}-1 \\
\mathrm{q}(x)=2 x^{2}-x+3 \\
m=3 \\
n=4
\end{array}\right] \\
& \text { No03 }=\left[\begin{array}{l}
\mathrm{p}(x)=x^{3}+2 x-5 \\
\mathrm{q}(x)=x^{2}+2 x+4
\end{array}\right] \\
& \text { No04 }=\left(E q=\left[x^{2}-6 x+8=(x-a)(x-b)\right]\right) \\
& \text { No05 }=\left(E q=\left[x^{2}+4 x+53=(x-a)^{2}+b^{2}\right]\right) \\
& \text { No06 }=\left[\mathrm{D}(x)=x^{2}-3 x, \mathrm{Q}(x)=x^{2}+5, \mathrm{R}(x)=3 x-2\right] \\
& N 007=\left[\begin{array}{cc}
.1=\left[\begin{array}{c}
\mathrm{a}(x)=x^{5}+3 x^{4}-2 x^{3}-4 x^{2}+3 \\
\mathrm{~b}(x)=x^{2}
\end{array}\right] & .2=\left[\begin{array}{c}
\mathrm{a}(x)=x^{5}+3 x^{4}-2 x^{3}-4 x^{2}+3 \\
\mathrm{~b}(x)=x^{4}
\end{array}\right] \\
.3=\left[\begin{array}{c}
\mathrm{a}(x)=x^{3}-1 \\
\mathrm{~b}(x)=x^{2}+4
\end{array}\right] & .4=\left[\begin{array}{c}
\mathrm{a}(x)=x^{4}+x^{3}+2 x-1 \\
\mathrm{~b}(x)=x-2
\end{array}\right] \\
.5=\left[\begin{array}{c}
\mathrm{a}(x)=3 x^{5}-4 \\
\mathrm{~b}(x)=x^{2}-3
\end{array}\right] & .6=\left[\begin{array}{c}
\mathrm{a}(x)=x^{6}+5 x^{3}-3 \\
\mathrm{~b}(x)=x^{3}+3
\end{array}\right]
\end{array}\right]
\end{aligned}
$$

[^0]X Math@MUT XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX6300302-00002XX Real01 Answers for No. 2

$$
\begin{aligned}
& \text { Ansl }=[a=0, b=0, c=4] \\
& \text { Ans } 2=\left[\begin{array}{cc}
.1=\left[\mathrm{p}(x)+\mathrm{q}(x)=3 x^{2}-x+2\right] & .2=\left[\mathrm{p}(x)-\mathrm{q}(x)=-x^{2}+x-4\right] \\
.3=\left[\mathrm{q}(x)-\mathrm{p}(x)=x^{2}-x+4\right] & .4=\left[\operatorname{mp}(x)-\mathrm{nq}(x)=-5 x^{2}+4 x-15\right] \\
.5=\left[\mathrm{p}(x) \mathrm{q}(x)=2 x^{4}-x^{3}+x^{2}+x-3\right] & .6=\left[[\mathrm{p}(x)]^{2}=x^{4}-2 x^{2}+1\right]
\end{array}\right] \\
& \text { Ans3 }=\left[\mathrm{p}(x) \mathrm{q}(x)=x^{5}+2 x^{4}+6 x^{3}-x^{2}-2 x-20\right] \\
& \text { Ans } 4=[a+b=6, a b=8], \quad, A n s 5=[a=-2, b=7, a b=-14] \\
& \text { Ans6 }=\left[\mathrm{P}(x)=x^{4}-3 x^{3}+5 x^{2}-12 x-2\right] \\
& \text { Ans } 7=\left[\begin{array}{cc}
.1=\left[\begin{array}{c}
\mathrm{Q}(x)=x^{3}+3 x^{2}-2 x-4 \\
\mathrm{R}(x)=3
\end{array}\right. & .2=\left[\begin{array}{c}
\mathrm{Q}(x)=x+3 \\
\mathrm{R}(x)=-2 x^{3}-4 x^{2}+3
\end{array}\right] \\
.3=\left[\begin{array}{c}
\mathrm{Q}(x)=x \\
\mathrm{R}(x)=-4 x-1
\end{array}\right] & .4=\left[\begin{array}{c}
\mathrm{Q}(x)=x^{3}+3 x^{2}+6 x+14 \\
\mathrm{R}(x)=27
\end{array}\right] \\
.5=\left[\begin{array}{c}
\mathrm{Q}(x)=3 x^{3}+9 x \\
\mathrm{R}(x)=27 x-4
\end{array}\right] & .6=\left[\begin{array}{c}
\mathrm{Q}(x)=x^{3}+2 \\
\mathrm{R}(x)=-9
\end{array}\right]
\end{array}\right]
\end{aligned}
$$




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