	$(x^6 - 5x^5 + 3x^4 + 7x^3 - 6x^2 + 2x - 8)(x^2 + 7x + 12)$
	Divide f(x) by d(x) using long division. Write a summary statement in polynomial form and factored form. $f(x) = x^2 + 5x + 6$ $d(x) = x + 2$ $x+3$ $x+2 \overline{)x^2+5x+6}$ $-(x^2+2x)$ $3x+6$ $-3x+6$ 0 $x+3$

Divide f(x) by d(x) by using long division, and write a summary statement in polynomial form and fraction form.

$f(x) = 3x^3 + 5x^2 + 8x + 7$, $d(x) = 3x + 2$

$$x^2 + x + 2 + \frac{3}{3x+2}$$

$$3x+2 \overline{)\, 3x^3 + 5x^2 + 8x + 7}$$

$x^2 + x + 2$

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

$3x^2 + 8x$

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

$6x + 7$

$-(6x + 4)$

3

$(p^3 - 10p^2 + 20p + 26) \div (p - 5)$

$$p^2 - 5p - 5 + \frac{1}{p-5}$$

$$p-5 \overline{)\, p^3 - 10p^2 + 20p + 26}$$

$p^2 - 5p - 5$

$-(p^3 - 5p^2)$

$-5p^2 + 20p$

$-(-5p^2 + 25p)$

$-5p + 26$

$(-)\ -5p + 25$

1

$(x^2 - 74) \div (x - 8)$

$$x + 8 + \frac{-10}{x-8}$$

$$x + 8 - \frac{10}{x-8}$$

$$x-8 \overline{)\, x^2 + 0x - 74}$$

$x + 8$

$(-)\ x^2 - 8x$

$8x - 74$

$(-)\ 8x - 64$

-10

$0 - (-8)$

Divide f(x) by d(x) by using synthetic division, and write a summary statement in polynomial form and fraction form.

$\left(-\frac{2}{3}\right)3 = -2$

$f(x) = 3x^3 + 5x^2 + 8x + 7 \quad d(x) = 3x + 2$

$-\frac{2}{3}$ | 3 5 8 7

	−2	−2	−4
3	3	6	3

$3x^2 + 3x + 6 + \frac{3}{3x+2}$

$x^2 + x + 2 + \frac{3}{3x+2}$

Zero

$f(x) = x^2 + 5x + 6 \qquad d(x) = x + 2$

−2 | 1 5 6

	−2	−6
1	3	0

$x + 3$

$(r^2 + 6r + 15) \div (r + 5)$

$(3r^3 + 11r^2 - 6r - 18) \div (r + 4)$