

10-6 Warm-up

$$1. \underbrace{a^2 - 7a}_{-\frac{7}{2}a - \frac{7}{2}a} + \underbrace{c}_{\left(\frac{b}{2}\right)^2} = \left(a - \frac{b}{2}\right)^2$$

$$c = \left(-\frac{7}{2}\right)^2 = \frac{49}{4}$$

$$2. \underbrace{3x^3 - 5x^2} \ominus \underbrace{12x + 20}$$

$$\underbrace{x^2(3x-5)} - \underbrace{4(3x-5)}$$

$$(x^2-4)(3x-5) \quad x(3+5)$$

$$(x+2)(x-2)(3x-5) \quad 3x+5x$$

$$(3+5)x$$

$$3. 8a^3 - 27 \overset{3}{\underset{3}{\ominus}}$$

$$a^3 + b^3 = (a+b)(a^2 - ab + b^2)$$

$$\underbrace{(2a-3)}_{-6a} \underbrace{(4a^2 + 6a + 9)}$$

216  $2^3 \cdot 3^3$   
 $2^3 \cdot 3^3$   
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$1^3 = 1$	$5^3 = 125$	$9^3 = 729$
$2^3 = 8$	$6^3 = 216$	$10^3 = 1000$
$3^3 = 27$	$7^3 = 343$	
$4^3 = 64$	$8^3 = 512$	

$$4. 125x^3 - 1 = \underbrace{(5x-1)}_{-5x} \underbrace{(25x^2 + 5x + 1)}_{(-1)(-1)}$$

$$5. x^2 + 11x + c = \left(x + \frac{11}{2}\right)^2$$

$$c = \left(\frac{11}{2}\right)^2 = \frac{121}{4}$$

$$6. \underbrace{15a^3 - 24a^2} - \underbrace{10a + 16}$$

$$3a^2(5a-8) - 2(5a-8)$$

$$(3a^2-2)(5a-8)$$



$$f(x) = x^3 - 6x^2 + 5x + 12$$

$$\text{factor: } x - 4$$

$$\begin{array}{r|rrrr} 4 & 1 & -6 & 5 & 12 \\ & & 4 & -8 & -12 \\ \hline & 1 & -2 & -3 & 0 \end{array}$$

$$x^2 - 2x - 3$$

$$(x+1)(x-3)(x-4)$$

p. 124 (21-27) odd, p. 115 (43-57) odd