7.1 Multiplying and Dividing Monomials

1. a) product; $-x$-tiles

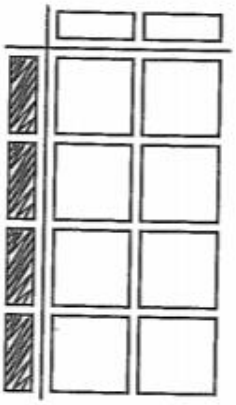
b) division; dividend; x-tiles

c) numerical coefficients; exponent rules

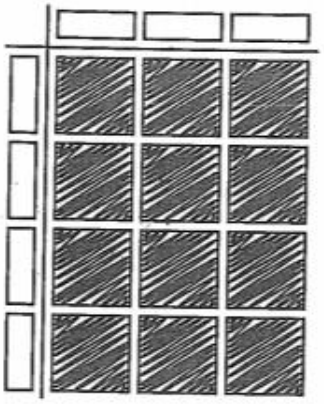
2. Example: To divide monomials algebraically, you can divide the numerical coefficients and then use the exponent rules to divide the variables.

3. Orientation of models may vary.

a) $-8x^2$

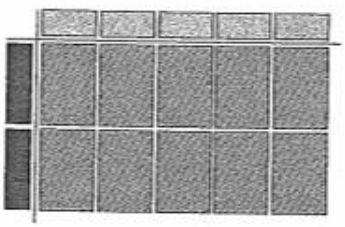


b) $12x^2$

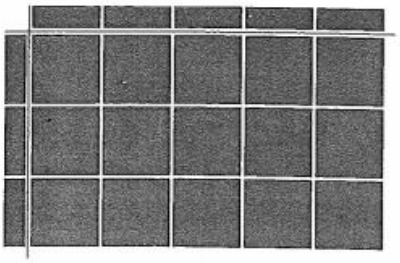


4. a) $6x^2 \div (-3x) = -2x$ **b)** $9xy \div 3x = 3y$

5. a) $2x$



b) $3x$



6. a) $24a^2$ **b)** $12x^2$ **c)** $-20x$ **d)** 4

7. a) $(12x)(4x)$; $48x^2$ **b)** $\frac{(3h)(4b)}{2}$; $6bh$

8. 12 m

9. a) $9x$ **b)** $4x$

7.2 Multiplying Polynomials by Monomials

1. a) area **b)** $(2x)(3x + 4) = 6x^2 + 8x$

2. $(-2x)(5x + 6) = (-2x)(5x) + (-2x)(6)$
$= -10x^2 - 12x$

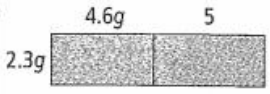
3. Order of factors may vary. Examples:

a) $(2y)(5y + 2)$ **b)** $(4.5t + 2.3)(3.1t)$

c) $(x)(x + 1)$ **d)** $(2x - 2)(-3x)$

4. Orientation of rectangles may vary. Examples:

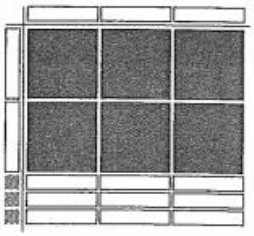
a)



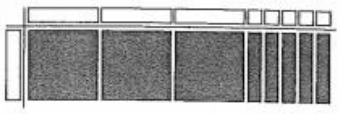
b)

5. Orientation of tiles may vary. Examples:

a)



b)



6. a) $(1.2z)(-4z) + (1.2z)(2y)$

b) $(-2e)(-e) + (-3f)(-e) + (4)(-e)$

7. a) $-49v^2 - 49vx$

b) $28x - 12xy$

c) $-0.1ab + 8b^2 - 0.7bc$

d) $\frac{3a^2}{2} - a$ or $\frac{3}{2a^2} - a$

8. Example:

a) $(6w - 4)$ m **b)** $(2w^2 - 2w)$ m^2

9. a) $48.3 + 2m$, where m is the cost of the catch of the day

b) $(0.15)(48.3 + 2m)$

c) \$89.93

7.3 Dividing Polynomials by Monomials

1. numerical coefficients; variables; quotient *or* divisor; divisor *or* quotient; product; dividend

2. dividend; quotient; model

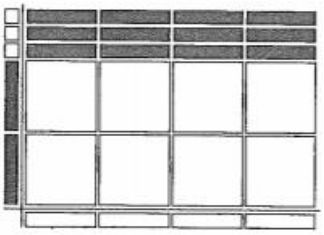
3. $(6x^2 + 8x) \div 2x$; $3x + 4$

4. $4x^2$; $6x$; $2x$; 3

5. $3x - 2$

6. $2x - 3$

Orientation of tiles may vary. Example:



7. a) $-6y + 1.8$ **b)** $-0.5s + t - 1.5$ or $-\frac{s}{2} + t - \frac{3}{2}$

c) $-0.9d^2 + 0.8d - 0.4$ **d)** $y + z + 1$

8. $7.5 \div (30x + 22.5)$

9. $(3.6x^2 + 7.2x)$ cm^2

10. $5t$ cm

11. a) 40π m^2 **b)** 5 m **c)** 4 m