5.6 Multiplying & Dividing a Polynomial by a Monomial

Symbolically

Find each product

(a) $3x(9x - 4)$

$= (3x)(9x) + (3x)(-4)$
$= 27x^2 \quad\quad + (-12x)$
$= \boxed{27x^2 - 12x}$

(b) $-6x(-7x + 5)$

$= \boxed{42x^2 - 30x}$

find the quotient

(a) $\dfrac{-8s^2 + 6s}{-2s}$
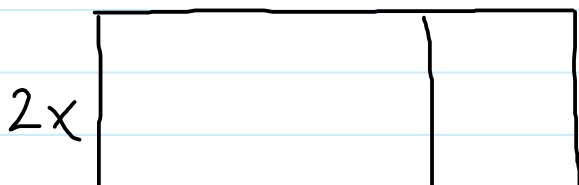
$= \dfrac{-8s^2}{-2s} + \dfrac{6s}{-2s}$

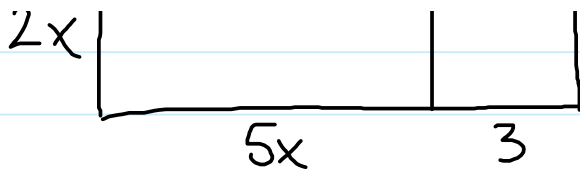$= 4s + (-3)$

$= \boxed{4s - 3}$

(b) $(9x^2) - (-3x)$

$= \dfrac{9x^2}{-3x}$

$= \boxed{-3x}$

Write the multiplication sentence modelled by the rectangle

2x

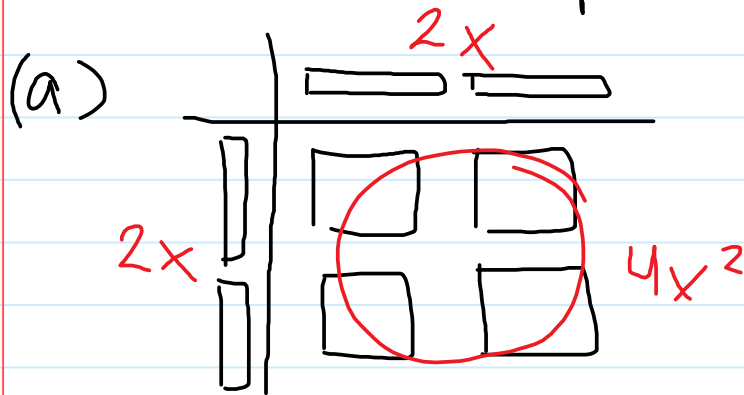$2x(5x+3)$

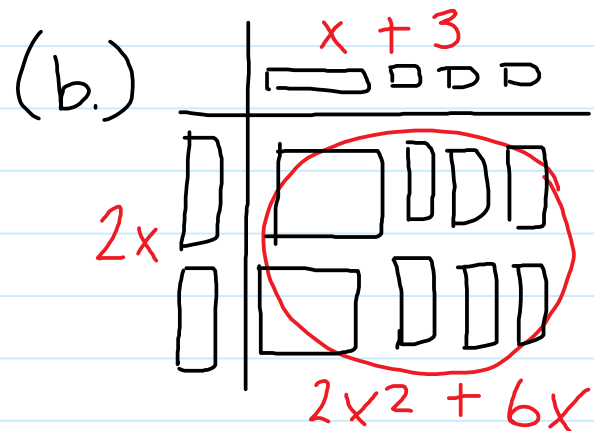$2x$ [diagram with $5x$ and 3 segments]

$2x(5x+3)$
$$= \boxed{10x^2 + 6x}$$

Write the multiplication sentence

(a)
$2x$ [area model diagram, $2x$ circled = $4x^2$]

$(2x)(2x) = \boxed{4x^2}$

(b.)
$x + 3$ [area model diagram, $2x$ circled = $2x^2 + 6x$]

$2x(x+3)$
$$= \boxed{2x^2 + 6x}$$

pg 255   # 4 – 12, 14, 16, 20, 21