5.5 Multiplying and Dividing a Polynomial by a Constant - Worksheet

1. Multiply.

a) $2(3b)$ **b)** $-2(6h)$ **c)** $4(2b^2)$

d) $-2(2x^2)$ **e)** $-2(-y^2)$ **f)** $-3(-2f)$

2. Divide.

a) $12d \div 4$ **b)** $-20d \div 5$ **c)** $8d \div -4$

d) $12y^2 \div 4$ **e)** $-14x^2 \div 2$ **f)** $-10q \div -5$

3. Determine each product.

a) $4(3a + 2)$

b) $(d^2 + 2d)(-3)$

c) $2(4c^2 - 2c + 3)$

d) $(-2n^2 + n - 1)(6)$

e) $-3(-5m^2 + 6m + 7)$

4. Here is a student's solution for a multiplication question.

$(-5k^2 - k - 3)(-2)$
$= -2(5k^2) - 2(k) - 2(3)$
$= -10k^2 - 2k - 6$

a) Explain why the student's solution is incorrect.

b) What is the correct answer? Show your work.

5. Determine each quotient.

a) $(16v + 16) \div (8)$

b) $(25k^2 - 15k) \div (5)$

c) $(20 - 8n) \div (-4)$

d) $(18x^2 - 6x + 6) \div (6)$

e) $(7 - 7y + 14y^2) \div (-7)$

6. Here is a student's solution for a division question.

$(-12r^2 - 8r - 16) \div (-4)$

$= \frac{-12r^2}{4} + \frac{-8r}{4} + \frac{-16}{4}$

$= -3r^2 - 2r + 4$

a) Explain why the student's solution is incorrect.

b) What is the correct answer? Show your work.