

Extra Practice 5

Lesson 5.5: Multiplying and Dividing a Polynomial by a Constant

1. Multiply. Sketch the tiles for one product.

a) $2(3b)$

b) $-2(6h)$

c) $4(2b^2)$

d) $-2(2x^2)$

e) $-2(-y^2)$

f) $-3(-2f)$

2. Divide. Sketch the tiles for one division statement.

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.

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

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

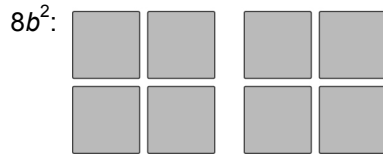
$$= -3r^2 - 2r + 4$$

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

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

Lesson 5.5

1. a) $6b$ b) $-12h$
 c) $8b^2$ d) $-4x^2$
 e) $2y^2$ f) $6f$



2. a) $3d$ b) $-4d$
 c) $-2d$ d) $3y^2$
 e) $-7x^2$ f) $2q$



3. a) $12a + 8$ b) $-3d^2 - 6d$
 c) $8c^2 - 4c + 6$
 d) $-12n^2 + 6n - 6$
 e) $15m^2 - 18m - 21$

4. a) The negative signs were omitted on the first polynomial when (-2) was distributed;
 $(-5k^2)(-2) + (-k)(-2) + (-3)(-2) =$
 $10k^2 + 2k + 6$

5. a) $2v + 2$ b) $5k^2 - 3k$
 c) $-5 + 2n$ d) $3x^2 - x + 1$
 e) $-1 + y - 2y^2$

6. The divisor is -4 , when writing the quotient expression as a sum of three fractions, each denominator should be -4 , rather than 4 ;
 $3r^2 + 2r + 4$