Extra Polynomial Practice – Multiplying & Dividing

1. Divide each of the following expressions.

a) $\frac{4x^2 - 6x}{-2x}$

b) $\frac{9x^2 + 6xy}{3x}$

2. Divide.

a) $\frac{15x^2 - 20x}{5x}$

b) $\frac{16m^2 + 20mn}{4m}$

c) $\frac{18k^2 - 9k}{9k}$

d) $\frac{12m + 18mn}{-6m}$

e) $\frac{1.4d^2 + 1.8dk - 1.6d}{2d}$

f) $\frac{9c^2 - 12c + 6}{-3}$

3. You are decorating the bulletin board in your classroom with pictures of your classmates. Each picture covers an area of $4x$ cm². The area of the board is $4x^2 + 16x$ cm². Write an expression to represent how many pictures are required to cover the board.

4. A rectangular lawn has a width of $3x$ m. The area is $15x^2 + 45x$ m². You wish to put a fence around the lawn.

a) What is an expression to represent the perimeter of the lawn?

5. Use the distributive property to expand each expression.

a) $(5m)(2m + 3)$

b) $(-n)(n + 1)$

c) $(1.3x)(2x - 5)$

d) $(-m + 2)(3m)$

e) $(4.1k - 5.3)(-3k)$

6. Multiply.

a) $(4m + 1)(3m)$

b) $(2x - 3)(-4x)$

c) $(4.2n)(2n - 7)$

d) $\left(\frac{2}{3}m + 4\right)(-9m)$

e) $\left(\frac{-4}{3}x\right)(6x - 12)$

7. The length of a cement pad on a playground is 3 m longer than the width. The width is $5x$ m.

a) Write an expression for the area of the cement pad.

b) If $x = 2$ m, what is the area of the cement pad?

Extra Practice Answers

1. a) $-2x + 3$

b) $3x + 2y$

2. a) $3x - 4$ **b)** $4m + 5n$
c) $2k - 1$ **d)** $-2 - 3n$
e) $0.7d + 0.9k - 0.8$ **f)** $-3c^2 + 4c - 2$

3. You will require $(x + 4)$ pictures to cover the bulletin board.

4. a) Length = $\frac{15x^2 + 45x}{3x} = (5x + 15)$ m

Perimeter = $2(3x) + 2(5x + 15) =$
$6x + 10x + 30 = 16x + 30.$
The perimeter is represented by $(16x + 30)$ m.

5. a) $(5m)(2m) + (5m)(3) = 10m^2 + 15m$
b) $(-n)(n) + (-n)(1) = -n^2 - n$
c) $(1.3x)(2x) - (1.3x)(5) = 2.6x^2 - 6.5x$
d) $(-m)(3m) + (2)(3m) = -3m^2 + 6m$
e) $(4.1k)(-3k) - (5.3)(-3k) =$
$-12.3k^2 + 15.9k$

6. a) $12m^2 + 3m$ **b)** $-8x^2 + 12x$
c) $8.4n^2 - 29.4n$ **d)** $-6m^2 - 36m$
e) $-8x^2 + 16x$

7. a) Area = $(5x)(5x + 3) = 25x^2 + 15x$
b) The area of the cement pad is 130 m².