Math 10

Lesson 2–1 Answers

Lesson Questions

Question 1

a) 24, 14

b) $6^1, 8^4, x^2$

c) x^5

d) $4x^3$

Question 2

Determine the GCF of each pair of terms.

a) 5mn

b) $12ab^2c$

Question 3

Write each polynomial in factored form.

a) $9rs^2(3r - 2r^2 - 4s)$

b) $2np(2p + 5n^3 - 6n^2)$

Question 4

Write each expression in factored form.

a) $(4 - 3x)(x + 5)$

b) $a^2 + 8ab + 2a + 16b$

$= (a^2 + 8ab) + (2a + 16b)$

$= a(a + 8b) + 2(a + 8b)$

$= (a + 2)(a + 8b)$

Assignment

1. a) 3ab   b) $27m^2n$ c) $8x^2y^2$ d) $4a^2c$ e) p^3q^3

2. a) 5(x + 3)   b) y(3y − 5)   c) $w^2(x + y − z)$ d) $6ab(a^2 − 3b)$ e) $3x(3x^2 − 4x + 2)$

3. a) 3ab   b) $s^2 − 5$ c) d − 7   d) 8x − 1   e) 4xy

4.

a) $3y(y - 2) + 4(y - 2)$

$= (y - 2)(3y + 4)$

b) $5a(a - 4) - 2(a - 4)$

$= (a - 4)(5a - 2)$

c) $2cx - 8x + 7c - 28$

$= 2x(c - 4) + 7(c - 4)$

$= (c - 4)(2x + 7)$

d) $3x^2 - 9x - 8x + 24$

$\quad = 3x(x-3) - 8(x-3)$

$\quad = (x-3)(3x-8)$

e) $2y^4 + y^3 - 10y - 5$

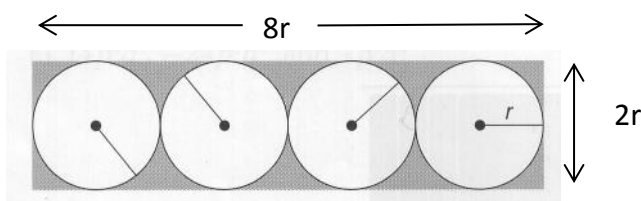$\quad = y^3(2y+1) - 5(2y+1)$

$\quad = (2y+1)(y^3 - 5)$

5.
   a) $12v^2 + 18v$
   b) $4x^2y - 6y^2$
   c) $12n^4 - 6n^2 + 2n$
   d) $24m^3n^2 + 21mn^3 - 12mn^2$

6.
   a) Incorrect: $3x \div 3x \neq 0$
      Correct: $3x(5x-1)$

   b) Incorrect: $(x-2) \div (x-2) \neq 0$
      Correct: $(x-2)(5x-1)$

   c) Incorrect: GCF $\neq 9ab$
      Correct: $9a^2b^2 (b - 3 + 9ab)$

   d) Incorrect: factoring incomplete
      Correct: $2(x+4)(2f+1)$

   e) Incorrect: expression not simplified
      Correct: $2(p^2 - 7p - 5)$
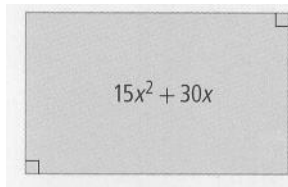
7.

$A_{shaded} = A_{rectangle} - A_{circles}$

$A_{shaded} = lw - 4\pi r^2$

$A_{shaded} = (8r)(2r) - 4\pi r^2$

$A_{shaded} = 16r^2 - 4\pi r^2$

$A_{shaded} = 4r^2 (4 - \pi)$

8.

$A = 15x^2 + 30x$

$A = 15x(x+2) = lw$

$l = 15x$

$w = x + 2$

9. First, identify the even multiples of 871: 871, <u>1742</u>, 2613, <u>3484</u>, 4355, <u>5226</u>

   Second, divide to find which are not divisicle $\dfrac{3484}{1742} = 2$ $\dfrac{5226}{3484} = 1.5$

   Therefore the smallest numbers are 3484 and 5226