Unit 2 – Final Review

1. Factor each polynimial

a) $2a^3b - 8a^2b$

b) $9x^3y^4 + 27xy^2$

c) $-3xy^6 - 15x^2y^2 + 3xy$

d) $2y^2x^5 + 2y^6 + 4y$

e) $72x^2y^3 - 48x^3y + 80x^2y$

f) $18u^7v^5 - 54u^3v^3 - 27uv^2$

g) $-9a^4b^5 - 12a^2b^3 + 6a^3$

h) $24y^6 + 20y^3 - 80y^2x$

i) $-12f^8g^6 + 6f^6g^7 + 12f^7g^5 + 54f^6g^3$

i) $-21ab^3 - 21a^2b^2 - 35ab^2 - 14a^4b$

2. Factor each polynomial

a) $x^2 - 9x + 18$

b) $x^2 + x - 42$

c) $n^2 + 9n + 14$

d) $r^2 - r - 12$

e) $5r^2 + r - 4$

f) $3k^2 - 7k - 10$

g) $7x^2 + 20x + 12$

h) $9x^2 + 7x - 2$

i) $7p^2 - 5p - 2$

j) $9x^2 - 12x - 32$ k) $4r^2 + 15r - 25$ l) $4x^2 + x - 5$

3. Factor each polynomial

a) $16x^2 - 9y^2$ b) $49x^2 - 25$ c) $4a^2 - 9b^2$

d) $225 - 121x^2$ e) $4x^2 + 12x + 9$ f) $16x^2 + 24x + 9$

g) $25x^2 - 20x + 4$ h) $9x^2 - 30x + 25$ i) $25x^2 - 10x + 1$

4. Expand and simplify if possible.

a) $(x + 3)(x + 2)$ b) $(x - 4)(x + 8)$ c) $(3a + 2)(a - 5)$

d) $(2x - 5)(4x - 7)$ e) $(2p + 3)(3p - 1)$ f) $(4x - 1)^2$

g) $(2b + 7)(2b^2 - 2b - 4)$ h) $(4n + 1)(4n^2 + 3n + 8)$ i) $(3x^2 + 6x + 8)(8x - 5)$

j) $(5x^2 - 6x + 1)(7x - 7)$ k) $2(x + 3) + 3(3x - 2)$ l) $(x + 2)^2 - 4(x + 1)$

m) $2x(x - 3) + x - 4(2x + 5)$ n) $2 + 4(x^2 - 3x + 4) - (x + 7)^2$

5. Determine the length of the rectangle if the area is $2x^2 + 9x - 5$

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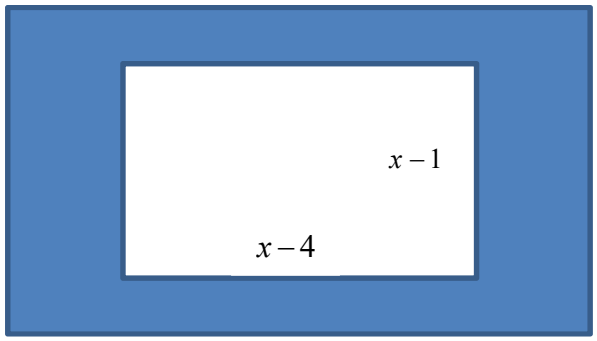
Area of rectangle: $A = (length) \times (width)$

$x+5$

length

6. Each figure is a rectangle. Write a polynomial that represents the area of the shaded region.

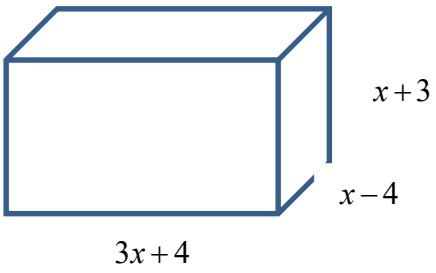


$x+5$

$2x+7$

7. Write a polynomial that represents the volume of the rectangular prism (box).

Volume of a rectangular prism: $V = (length) \times (width) \times (height)$



Additional Practice: p.199 #11bdf, 12abc, 13, 18acef, 19, 24bdf, 25, 27ac, 30, 32, 33ace