

2.3 - Mixed Practice

Date _____ Period _____

Use the following functions to evaluate

$f(x) = x + 2$

$g(x) = x^2 + 3x + 1$

$h(x) = 2x^2 - 3$

$k(x) = 3 - x$

1)

1. $f(2) = 2 + 2 = 4$

2. $g(4) = (4)^2 + 3(4) + 1$
 $= 29$

3. $f(-6) = (-6) + 2$
 $= -4$

4. $k(5) = 3 - 5 = -2$

5. $h(2) = 2(2)^2 - 3 = 5$

6. $k(-2) = 3 - (-2) = 5$

2) 1. $f(x) + g(x) = (x + 2) + (x^2 + 3x + 1)$
 $x^2 + 4x + 3$

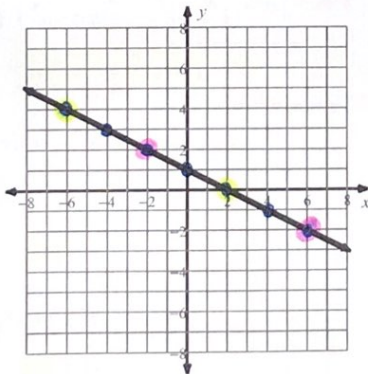
2. $g(x) - h(x) = -x^2 + 3x + 4$

3. $f(x) \cdot g(x) = (x + 2)(x^2 + 3x + 1)$
 $x^3 + 3x^2 + x + 2x^2 + 6x + 2$
 $x^3 + 5x^2 + 7x + 2$

4. $f(x) \cdot 2h(x) = 4x^3 + 8x^2 - 6x - 12$

Find the indicated values by using the graph.

3)



4) $f(2) = 0$

$f(-6) = 4$

$f(-2) = 2$

$f(6) = -2$

Name each polynomial by degree and number of terms.

5) $-7 - 3v - 4v^2$

- A) quadratic trinomial
 B) quadratic monomial
 C) linear monomial
 D) cubic binomial

6) $4b - 7$

- A) quadratic monomial
 B) linear binomial
 C) constant binomial
 D) linear monomial

Simplify each expression.

*Distribute negative and combine like terms.

7) $(2x^2 - 2x) - (4x - 3x^2) = 2x^2 - 2x - 4x + 3x^2$

$5x^2 - 6x$

9) $(-5x^4 - 2x^2) + (4x^3 + 6x^2 - 4x^4)$
 $-9x^4 + 4x^3 + 4x^2$

11) $(-4n^4 - 8n + 8n^2) + (2n^3 + 3n^4 - 3n)$
 $-n^4 + 2n^3 + 8n^2 - 11n$

8) $(-8n^3 + 4n^2) - (2n^2 + 8n^3)$

$-16n^3 + 2n^2$

10) $(n^3 - 4n) - (-8n^3 + 3n + n^2)$

$9n^3 - n^2 - 7n$

12) $(-8 + 4x) - (-x^3 + 6x - 5) + (3 - 2x^3)$

$-x^3 - 2x$

Find each product.

13) $7(4b + 4)$

$28b + 28$

14) $4(4n + 7)$

$16n + 28$

*Distribute + combine like terms

15) $(3r - 7)(5r - 7) = 15r^2 - 21r - 35r + 49$
 $15r^2 - 56r + 49$

16) $(3x + 2)(5x - 4)$

$15x^2 - 2x - 8$

17) $(7x + 4)(8x - 2) = 56x^2 - 14x + 32x - 8$
 $56x^2 + 18x - 8$

18) $(8x - 6)(7x - 3)$

$56x^2 - 66x + 18$

19) $(7n - 6)(n^2 + 8n + 1) = 7n^3 + 56n^2 + 7n - 6n^2 - 48n - 6$
 $7n^3 + 50n^2 - 41n - 6$

20) $(5b - 2)(6b^2 - 2b + 4)$

$30b^3 - 22b^2 + 24b - 8$

Review: Solve each equation.

21) $3 + 5(8 - r) = 83$
 $3 + 40 - 5r = 83$
 $43 - 5r = 83$
 $-5r = 40$
 $r = -8$

22) $-8x + 5 = -3 - 6x$

$\{4\}$

$-8x + 5 = -3 - 6x$
 $+6x \quad +6x$
 $-2x + 5 = -3$
 $-6 \quad -6$
 $-2x = -8$
 $\div 2 \quad \div 2$
 $x = 4$

23) $-31 - 3x = -7(x + 1)$

$\{6\}$

24) $\frac{3}{9} = \frac{10}{n + 1}$

$\{29\}$

Review: Solve each equation for the indicated variable.

25) $z = am + b$, for a
 $z - b = am$
 $\frac{z - b}{m} = a$

A) $a = -\frac{m}{z + b}$

B) $a = \frac{-z - b}{m}$

C) $a = \frac{z - b}{m}$

D) $a = mz + mb$

26) $x + k = v - w$, for x

A) $x = -k + v - w$

B) $x = -k - v + w$

C) $x = v + w + k$

D) $x = k + v - w$