ALEKS® FND M030 - Review Pack #2

Intermediate Algebra / FND M030 Summer 16-FC5 – 32322/31723-Anju D-04S1MATH03-SO2 (Prof. Dhamija)

Student Name/ID:

1. Evaluate the expression when $y = -2$.

$$y^2 + 5y + 7$$

2. Simplify.

$$\left(\frac{4x^5 y^7}{8x^2} \right)^4$$

Write your answer using only positive exponents.

3. Multiply.

$$(7y - 3z)(7y + 3z)$$

Simplify your answer.

4. Rewrite without parentheses and simplify.

$(v+6)^2$

5. Multiply.

$(5y-6)(7y^2+4y-2)$

Simplify your answer.

6. Factor $25y^2+20y$.

7. Factor by grouping.

$5w^3+3w^2+35w+21$

8. Factor.

v^2-25

9. Factor.

$27u^3+125$

10. Factor completely:

$u^4v^3 - 16v^3$.

11. Factor.

$y^2 + 7y - 18$

12. Simplify.

$$\frac{\frac{35x}{3x-21}}{\frac{5}{4x-28}}$$

13. Rationalize the denominator and simplify.

$$\frac{5}{5-2\sqrt{w}}$$

Assume that the variable represents a positive real number.

14. Simplify.

$$\frac{6w^2-6}{w^2-5w-6}$$

15. Write the following expression in simplified radical form.

$$\sqrt[4]{80x^{20}w^{18}}$$

Assume that all of the variables in the expression represent positive real numbers.

16. Solve for x.

$$z=(5+x)k$$

17. For each equation, choose the statement that describes its solution.
If applicable, give the solution.

$5(w+1)-w=3(w-1)+7$
○ No solution
○ $w=$
○ All real numbers are solutions
$3(x-2)-5x=-2(x+2)$
○ No solution
○ $x=$
○ All real numbers are solutions

18. Solve for w.

$$-3=-\frac{8}{w+7}$$

Simplify your answer as much as possible.

19. Solve for w.

$$-\frac{5}{w-6}=\frac{7}{5w-30}+1$$

20. Subtract.

$$(5-5i)-(-5+2i)$$

Write your answer as a complex number in standard form.

21. Multiply.

$$(-5-2i)(-2+3i)$$

Write your answer as a complex number in standard form.

22. Use the quadratic formula to solve for x.

$$4x^2-9x+3=0$$

23. The functions f and g are defined as follows.

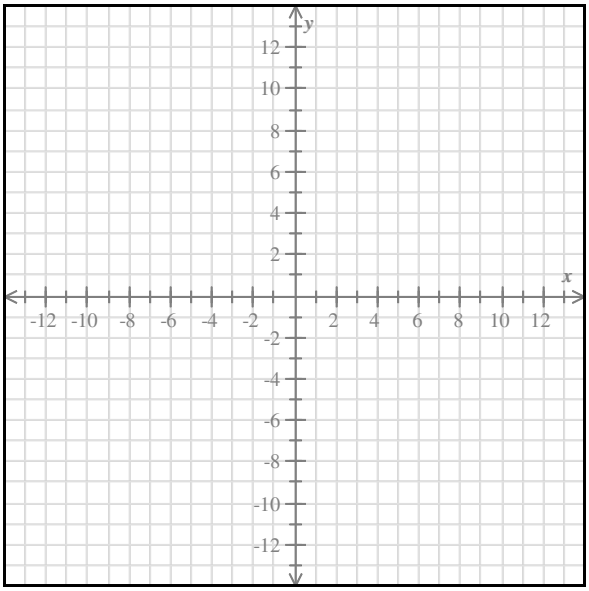
$$f(x)=2x^3+6 \qquad g(x)=-5x-1$$

Find $f(-3)$ and $g(4)$.

Simplify your answers as much as possible.

24. Graph the parabola.

$y = 3x^2$



25. Solve for w.

$5w^2 - 7w = 6$

26. Fill in the blank to make the expression a perfect square.

$y^2 + 10y + \square$

27. Compute the value of the discriminant and give the number of real solutions of the quadratic equation.

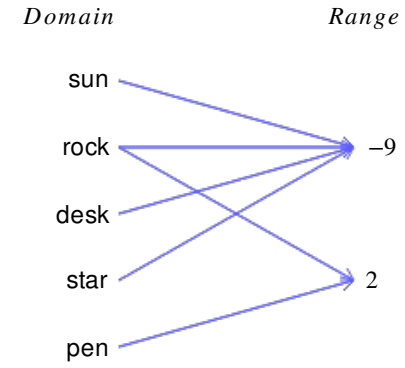
$$4x^2 - 9x + 4 = 0$$

Discriminant:

Number of real solutions:

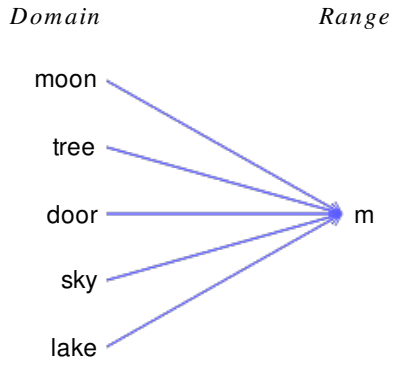
28. For each relation, decide whether or not it is a function.

Relation 1



- Function
- Not a Function

Relation 2



- Function
- Not a Function

Relation 3

$\{(2, -1), (-8, -1), (6, 2), (-2, 2)\}$

- Function
- Not a Function

Relation 4

$\{(r, y), (s, y), (m, y), (y, y)\}$

- Function
- Not a Function

29. Suppose that the relation S is defined as follows.

$$S = \{(-5, -5), (9, 9), (9, -3)\}$$

Give the domain and range of S.
Write your answers using set notation.

30. The functions f and g are defined as follows.

$$f(x) = 3x^2 - 3x \qquad g(x) = -3x + 4$$

Find $f(-3)$ and $g(5)$.

Simplify your answers as much as possible.

FND M030 - Review Pack #2 Answers for class Intermediate Algebra / FND M030 Summer 16-FC5 – 32322/31723-Anju D-04S1MATH03-SO2

1. 1

2. $\frac{x^{12}y^{28}}{16}$

3. $49y^2 - 9z^2$

4. $v^2 + 12v + 36$

5. $35y^3 - 22y^2 - 34y + 12$

6. $5y(5y + 4)$

7. $(5w + 3)(w^2 + 7)$

8. $(v + 5)(v - 5)$

9. $(3u + 5)(9u^2 - 15u + 25)$

10. $v^3(u - 2)(u + 2)(u^2 + 4)$

11. $(y - 2)(y + 9)$

12. $\frac{28x}{3}$

13. $\frac{25 + 10\sqrt{w}}{25 - 4w}$

14. $\frac{6(w - 1)}{(w - 6)}$

15. $2x^5w^4\sqrt[4]{5w^2}$

16. $x=\frac{z}{k}-5$

17.

$5(w+1)-w=3(w-1)+7$
○ No solution
◉ w = -1
○ All real numbers are solutions

$3(x-2)-5x=-2(x+2)$
◉ No solution
○ x =
○ All real numbers are solutions

18. $w=-\frac{13}{3}$

19. $w=-\frac{2}{5}$

20. $10-7i$

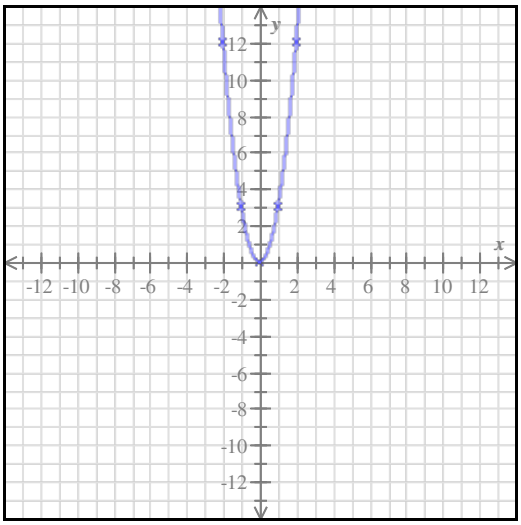
21. $16-11i$

22. $\frac{9+\sqrt{33}}{8}, \frac{9-\sqrt{33}}{8}.$

23. $f(-3)=-48$

$g(4)=-21$

24.



25. $-\frac{3}{5}, 2$

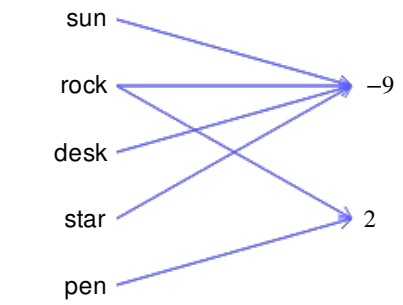
26. $y^2 + 10y + 25$

27. Discriminant $= 17$

Number of real solutions $= 2$

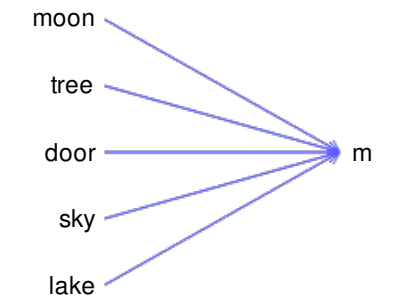
28.

Relation 1



- ○ Function
- ◉ Not a Function

Relation 2



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Relation 4

$\{(r, y), (s, y), (m, y), (y, y)\}$

- ◉ Function
- ○ Not a Function

29. domain $= \{-5, 9\}$
range $= \{-5, 9, -3\}$

30. $f(-3) = 36$
$g(5) = -11$