Name **MAT 231**
Date **Assessment#5**

ASSESSMENT#5-Chapter 2.4-2.7

1. Find real numbers *a* and *b* such that the equation is true.

$a + bi = -8 + 18i$

2. Write the complex number in standard form.

$3 - \sqrt{-30}$

3. Find all the zeros of the function.

$x(x - 5)^2$

4. Find all the zeros of the function.

$(x - 3)(x + 9)^3$

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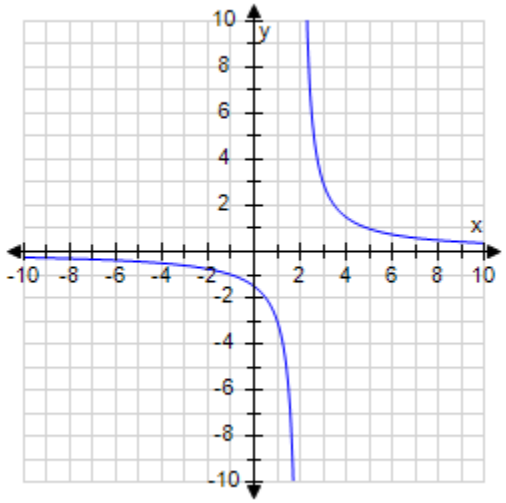
5. Determine the equations of the vertical and horizontal asymptotes of the graph of the function $f(x) = \dfrac{1}{x-3}$.

6. The graph of the function

$$f(x) = \frac{3}{x-2}$$

is shown below. Determine the vertical and horizontal asymptotes of its graph.



(7) Evaluate the following trigonometric expressions:

a. $\sin(30°)$

b. $\cos(30°)$

c. $\csc(60°)$

d. $\tan^{-1}(1)$

e. $\cos(\tan^{-1}(1))$

(8) Prove that the following equation is an identity:

a. $\tan \emptyset \sin \emptyset \cos \emptyset = sin^2 \emptyset$

b. $\sec\emptyset\,(\cos\emptyset - \cot\emptyset) = 1 - \csc\emptyset$

c. $1 - \frac{\cos \emptyset}{\sec \emptyset} = sin^2 \emptyset$

d. $\sin\emptyset\,(\csc\emptyset - \sin\emptyset) = \ cos^2\emptyset$