Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_

**Unit 17 Review**

1. Perform the following operations on the given functions.

|  |
| --- |
| 1. Let $f\left(x\right)=2x-4$ and $g\left(x\right)=-4x+3$.
 |
| 1. $\left(f+g\right)\left(x\right)=$
 | 1. $\left(f-g\right)\left(x\right)=$
 | 1. $\left(g-f\right)\left(x\right)=$
 |
| 1. Let $f\left(x\right)=x^{2}-3$ and $g\left(x\right)=4x-4$.
 |
| 1. $\left(g+f\right)\left(x\right)=$
 | 1. $\left(g-f\right)\left(x\right)=$
 | 1. $\left(f-g\right)\left(x\right)=$
 |
| 1. Let $f\left(x\right)=3x^{2}-4$ and $g\left(x\right)=x$.
 |
| 1. $\left(f∙g\right)\left(x\right)=$

  | 1. $\left(\frac{f}{g}\right)\left(x\right)=$
 |
| 1. Let $f\left(x\right)=-5x$ and $g\left(x\right)=x-4$.
 |
| 1. $\left(f∙g\right)\left(x\right)=$

  | 1. $\left(\frac{f}{g}\right)\left(x\right)=$
 |
| 1. Let $f\left(x\right)=3x-1$ and $g\left(x\right)=x^{2}$.
 |
| 1. $\left(f∘g\right)\left(x\right)=$
 | 1. $\left(g∘f\right)\left(x\right)=$
 |
| 1. Let $f\left(x\right)=4x$ and $g\left(x\right)=2x+5$.
 |
| 1. $\left(f∘g\right)\left(x\right)=$

  | 1. $\left(g∘f\right)\left(x\right)=$
 |

1. Review

|  |  |
| --- | --- |
| 1. Simplify: $\sqrt{196}$
 | 1. State the dimensions of the following matrix: $\left[\begin{matrix}5&8&-7\\1&11&3\end{matrix}\right]$
 |
| 1. Factor: $x^{2}+x-20$
 | 1. Solve: $x^{2}-64=0$
 |
| 1. Simplify: $\sqrt{-200}$
 | 1. Simplify: $\left(-5i\right)+6-\left(-8+8i\right)$
 |
| 1. Find the number and type of solutions for the following quadratic equation using the discriminant: $12x^{2}+12x+6=0$
 |

**Answers**

$$-x^{2}+4x-1$$

$$2 X 3$$

$$\frac{-5x}{x-4}, x\ne 4$$

$$2 Imaginary$$

$$14-13i$$

$$10i\sqrt{2}$$

$$\left(x+5\right)\left(x-4\right)$$

$$14$$

$$x=\pm 8$$

$$8x+20$$

$$3x^{2}-1$$

$$x^{2}+4x-7$$

$$9x^{2}-6x+1$$

$$-6x+7$$

$$6x-7$$

$$x^{2}-4x+1$$

$$\frac{3x^{2}-4}{x}, x\ne 0$$

$$3x^{3}-4x$$

$$-5x^{2}+20x$$

$$8x+5$$

$$-2x-1$$