

### Warm-up

1. Write the equation for the parent function  $f(x) = \frac{1}{x}$  when it has a vertical stretch by 5, horizontal translation left 3, and a vertical translation down 7.

$$f(x) = 5\left(\frac{1}{x+3}\right) - 7$$

2. Identify the domain and range, end behavior, and the increasing, decreasing, or constant intervals.

D:  $[-4, 4)$

I:  $[-4, -2], [-2, 0], [0, 4)$

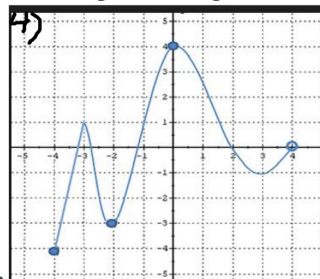
R:  $[-4, 4]$

D:  $[-3, 2], [0, 3]$

End behavior, down, up

3. Evaluate:

$$f(x) = \begin{cases} 3x & \text{if } x < 3 \\ 2x^2 & \text{if } x \geq 3 \end{cases}$$



$f(3) = 18$   
 $2(3)^2$

$f(-5) = -15$   
 $3(-5)$

$f(6) = 72$   
 $2(6)^2$

### ACT Question of the Day

The weekly fee for staying at the Pleasant Lake Campground is \$20 per vehicle and \$10 per person. Last year, weekly fees were paid for  $v$  vehicles and  $p$  persons. Which of the following expressions gives the total amount, in dollars, collected for weekly fees last year?

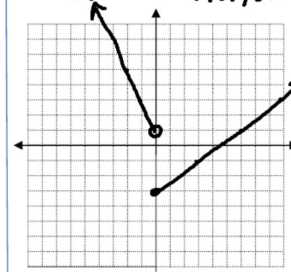
- A.  $20v + 10p$
- B.  $20p + 10v$
- C.  $10(v + p)$
- D.  $30(v + p)$
- E.  $10(v+p)+20p$

## Unit 1: Functions

### Graphing Piecewise Functions

TRY IT!

$$f(x) = \begin{cases} -2x + 1, & x < 0, -1, -2, -3 \\ \frac{2}{3}x - 3, & x \geq 0, 1, 2, 3, \dots \end{cases}$$



$x < \#$   
 $x$  is less

$x > \#$   
 $x$  is greater

$$f(x) = \begin{cases} 5, & x \leq 2 \\ 2x - 4, & x > 2 \end{cases}$$

