Warm-up 4/25

1. $y = 5200(3^x)$ is the model of growth per day of mold spores for a type of mold. A loaf of bread can hold a maximum of 456,800,000,000 mold spores.

- **What things do you know about the mold spores and its growth from the equation?**

- **How long will it take to completely take over the loaf of bread?**

2. A tour boat leaves the dock and travels to an awesome amusement park at 8 miles per hour for x hours. The return trip to the dock takes y hours at 12 miles per hour. The boat ride takes a total of 5 hours.

How long was the trip from the dock to the amusement park?

How far is the dock from the wildlife park?

Warm-up 4/25

1. $y = 5200(3^x)$ is the model of growth per day of mold spores for a type of mold. A loaf of bread can hold a maximum of 456,800,000,000 mold spores.

- **What things do you know about the mold spores and its growth from the equation?**

It is growing by x3 (or tripling).
The bread starts with 5200 mold spores.

- **How long will it take to completely take over the loaf of bread?**

$5200(3^{25}) = 4.406E15$ (way over)
4,406,000,000,000,000

17 days

$5200(3^{17}) = 6.715E11$
671,500,000,000 ✓ (just over)

$5200(3^{16}) = 2.238E11$
223,800,000,000 ✗ (below)

2. A tour boat leaves the dock and travels to an awesome amusement park at 8 miles per hour for x hours. The return trip to the dock takes y hours at 12 miles per hour. The boat ride takes a total of 5 hours.

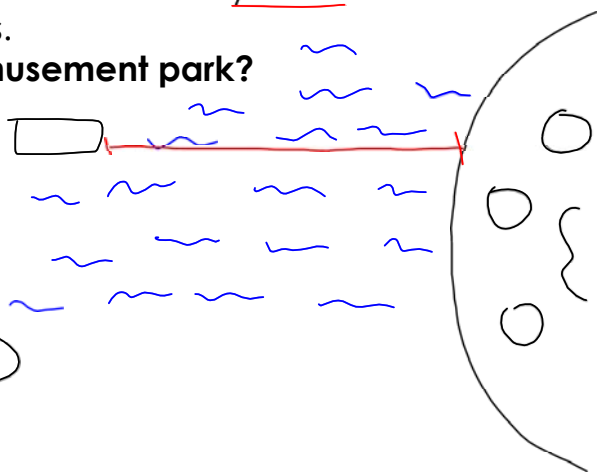
How long was the trip from the dock to the amusement park?

$8x = 12y$
$y = \frac{2}{3}x$
$y = 5 - x$

$x + y = 5$
$-x \quad -x$
$y = 5 - x$

$8x = 12(5 - x)$
$8x = 60 - 12x$
$+12x \quad +12x$
$\frac{20x}{20} = \frac{60}{20}$
$x = 3$

3 hours



How far is the dock from the wildlife park?

$8(3) = 24$
$12(2) = 24$

24 miles

Warm-up 4/25

1. $y = 5200(3^x)$ is the model of growth per day of mold spores for a type of mold. A loaf of bread can hold a maximum of 456,800,000,000 mold spores.

- **What things do you know about the mold spores and its growth from the equation?**

Each day the mold triples (grows exponetially)
It starts with 5200 mold spores.

- **How long will it take to completely take over the loaf of bread?**

$5200(3^7) = 11,372,400$ $5200(3^{15}) = 2,015,000,000$
$5200(3^{30}) = 1,071,000,000,000,000$ over
$5200(3^{20}) = 1,813,000,000,000$ over
$5200(3^{17}) = 6,715,000,000$ ✓ 17 days
$5200(3^{18}) = 2,238,000,000$

2. A tour boat leaves the dock and travels to an awesome amusement park at 8 miles per hour for x hours. The return trip to the dock takes y hours at 12 miles per hour. The boat ride takes a total of 5 hours.

How long was the trip from the dock to the amusement park?

$\frac{8x}{12} = \frac{12y}{12}$

$y = \frac{2}{3}x$

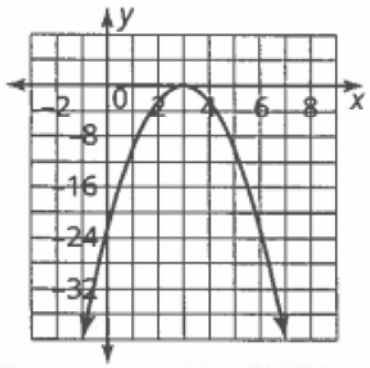
3 hours

$x + y = 5$
$-x \quad -x$
$y = -x + 5$
$8x = 12(-x + 5)$
$8x = -12x + 60$
$+12x \quad +12x$
$\frac{20x}{20} = \frac{60}{20}$
$x = 3$

How far is the dock from the wildlife park?

$8(3) =$ 24 miles

E.



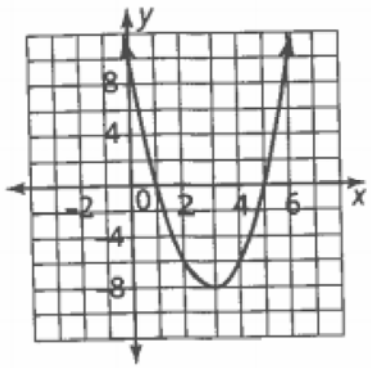
c. $f(x) = -2.5(x - 3)(x - 3)$

$x - 3 = 0$

$+3 \quad +3$

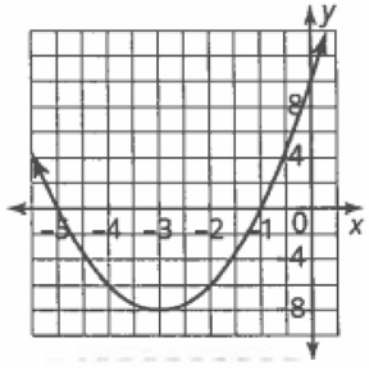
$x = 3$

F.

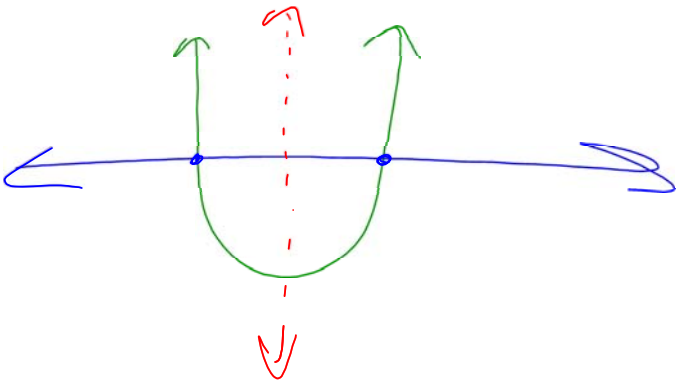


e. $f(x) = 2(x - 1)(x - 5)$

B.



a. $f(x) = 2(x + 1)(x + 5)$



Homework

USATestPrep Benchmark