Praxis Review - Form 2

Click on the answer box and type in a number. Backspace to erase.

The solution to the system of equations $ax + y = 5$ and $ax + by = 11$ is $(-1, 2)$, where a and b are constants. What is the value of b?

$$b = \boxed{}$$

Sys Eqns

$$ax + y = 5 \qquad ax + by = 11$$

Substitute $(-1, 2)$ for x & y

$$a(-1) + 2 = 5 \qquad a(-1) + 2b = 11$$

Now solve

$$-a + 2 = 5 \quad \xrightarrow{\times (-1)} \quad a - 2 = -5$$

$$-a + 2b = 11 \qquad\qquad -a + 2b = 11$$

$$\overline{} \qquad \overline{}$$
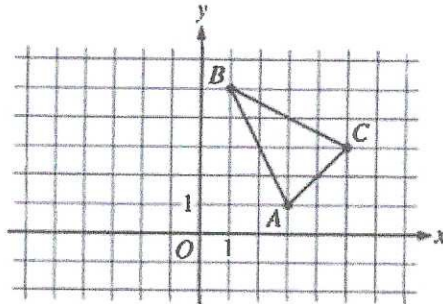
$$2b - 2 = 6$$

$$2b = 8$$

$$b = 4$$

Praxis Review - Form 2

#47

Answer the question below by clicking on the correct response.

In the xy-plane above, triangle ABC is rotated 90° counterclockwise about the origin and then reflected across the y-axis to form triangle A′B′C′ (not shown), where B′ corresponds to the transformation of point B. What are the coordinates of B′?

- A. (5, 1)
- ○ (3, 5)
- ○ (1, 3)
- ○ (1, 5)

Rotation of 90°

$(x, y) \longrightarrow (-y, x)$

PT B $(1, 5) \longrightarrow (-5, 1)$

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Reflection across y Axis

$(x, y) \longrightarrow (-x, y)$

$(-5, 1) \longrightarrow (5, 1)$

Praxis Review - Form 2

Click on the answer box and type in a number. Backspace to erase.

The function f is defined by $f(x) = (x + 1)(x - 5)$ for all real numbers x. What is the least possible value of $f(x)$?

$\boxed{}$

$$f(x) = (x+1)(x-5)$$

$\boxed{y = ax^2 + bx + c}$

$$y = x^2 - 4x - 5$$

least / most value occurs at vertex

$$V\left(-\frac{b}{2a}, \text{ plug in }\right)$$

$$V\left(\frac{-(-4)}{2(1)}, \quad\right)$$

$$V(2, \quad$$

$$f(x) = (x+1)(x-5)$$
$$= (2+1)(2-5)$$
$$= 3(-3)$$
$$= -9$$

Praxis Review - Form 2

Answer the question below by clicking on the correct response.

The value of a is 10% less than the value of b, and the value of c is 20% greater than the value of d. The value of ac is what percent greater than the value of bd ?

- ○ 2%
- ○ 5%
- ○ 8%
- ○ 10%

if a is 10% less than b, the a is 90% of b

$$a = \frac{9}{10}b \quad , \quad c = \frac{12}{10}d$$

$$ac = \left(\frac{9}{10}b\right)\left(\frac{12}{10}d\right)$$

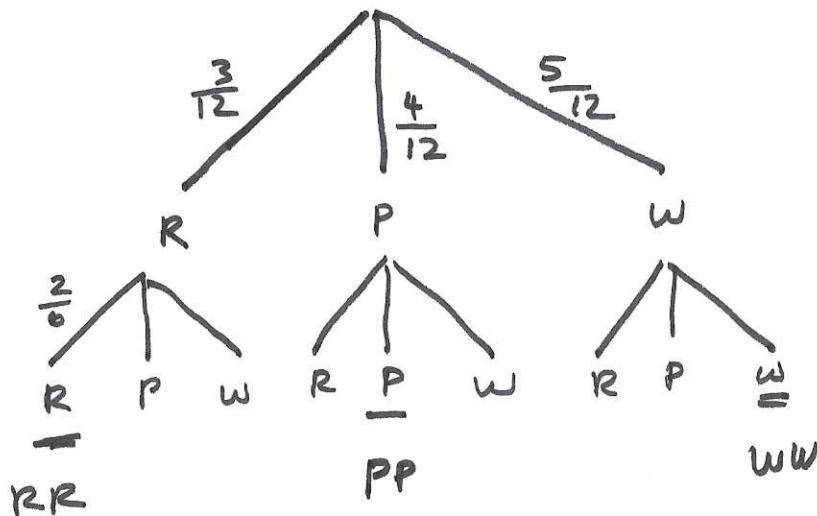$$= \frac{108}{100}bd$$

8% greater

Praxis Review - Form 2

#50

Click on each box and type in a number. Backspace to erase.

A vase has 3 red roses, 4 pink roses, and 5 white roses. Another vase has 2 red roses, 2 pink roses, and 2 white roses. If one rose is to be selected at random from each vase, what is the probability that both roses will be the same color?

Give your answer as a fraction.

Tree Diagram

$$\boxed{} \atop \boxed{}$$

$$\frac{3}{12} \cdot \frac{2}{6} \quad + \quad \frac{4}{12} \cdot \frac{2}{6} \quad + \quad \frac{5}{12} \cdot \frac{2}{6}$$

$$\frac{6}{72} \quad + \quad \frac{8}{72} \quad + \quad \frac{10}{72} \quad = \quad \frac{24}{72}$$

$$= \frac{1}{3}$$

Praxis Review - Form 2

Answer the question below by clicking on the correct response.

Which of the following functions increases over its entire domain?

graphs

○ $f(x) = x^3 - 4x$

○ $f(x) = x^2$

○ $f(x) = -2x + 5$

○ $f(x) = \sqrt{x+2}$

#52

Answer the question below by clicking on the correct response.

Each of the four circles in the figure above has radius *r* and is tangent to two other circles. What is the length of the perimeter of the figure (indicated by the bold outline of the circles) in terms of *r* ?

○ $\frac{7}{4}\pi r^2$

○ $4\pi r^2$

○ $\frac{3}{4}\pi r$

✗ $6\pi r$

$C = 2\pi r$

each circle is $^3/_4$

∴ $\frac{3}{4} 2\pi r = \frac{6}{4}\pi r$

$= \frac{3}{2}\pi r$

There are 4 circles

$4 \cdot \frac{3}{2}\pi r$

$\frac{12}{2}\pi r$

$6\pi r$

Praxis Review - Form 2

#53

Click on a choice and drag it to a box.

$$3a = 2b = c \text{ and } a > 0$$

Based on the information shown, order the expressions below from least to greatest.

$$ab^2 \qquad ac^2 \qquad a^2c \qquad b^2c$$

Least   Greatest

$3a = 2b \qquad 2b = c \qquad 3a = c$

$\qquad\qquad\qquad b = \frac{1}{2}c \qquad a = \frac{1}{3}c$

$\left(\text{Put in same terms} \right)$

Substitute

$$ab^2 \qquad ac^2 \qquad a^2c \qquad b^2c$$

$\left(\frac{1}{3}c\right)\left(\frac{1}{2}c\right)^2$

$\qquad\qquad \left(\frac{1}{3}c\right)c^2$

$\qquad\qquad\qquad\qquad \left(\frac{1}{3}c\right)^2 c$

$\qquad\qquad\qquad\qquad\qquad\qquad \left(\frac{1}{2}c\right)^2 c$

$$\frac{1}{12}c^3 \qquad \frac{1}{3}c^3 \qquad \frac{1}{9}c^3 \qquad \frac{1}{4}c^3$$

$$\frac{1}{12} \qquad \frac{1}{9} \qquad \frac{1}{4} \qquad \frac{1}{3}$$

$$ab^2, \quad a^2c, \quad b^2c, \quad ac^2$$

Praxis Review - Form 2

Answer the question below by clicking on the correct response.

Ashley is going to a movie at a theater with her friends Brianna, Carla, and Denise. The four friends will sit in consecutive seats in the same row, and Ashley and Brianna will sit next to each other. How many different seating arrangements of the four friends are possible?
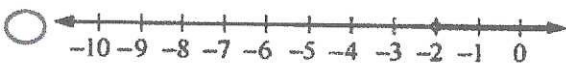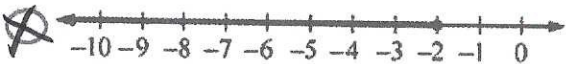
○ 6

○ 12

○ 16

○ 24

Counting

$4 \cdot 3 = 12$

#55

Answer the question below by clicking on the correct response.

On which of the following number lines does the graph represent the solution set of the inequality $-2(x - 3) \geq 10$?

○ -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0

○ -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0

✗ -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0

○ -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0

$$-2(x-3) \geq 10$$

$$-2x+6 \geq 10$$

$$-2x \geq 4$$

$$x \leq -2$$