

C_01 First Night Review and Key

Sunday, September 1, 2019 5:39 PM



C_01 First Night Review

First Night Review Questions

1. Simplify each expression below completely.

a) $(3x^2y)^2$

b) $(x - 4)^2$

c) $(-6)^2$

d) -5^2

e) $(2x - 3)(x + 5)$

2. Solve.

a) $5x - 4 = 0$

b) $x(x - 5)(2x + 3) = 0$

3.

This graph represents which of the following inequalities?



A. $x > 3$

B. $x < 3$

C. $x \geq 3$

D. $x \leq 3$

4. Factor.

a) $7x - 21$

b) $x^2 - 2x - 15$

c) $6x^2 + 19x + 10$

d) $4x^2 - 9$

5. Simplify.

a) $\frac{2}{7} \times \frac{3}{4} =$

b) $\frac{\left(\frac{1}{3}\right)}{\left(\frac{4}{5}\right)} =$

c) $\frac{1}{3} + \frac{4}{5} =$

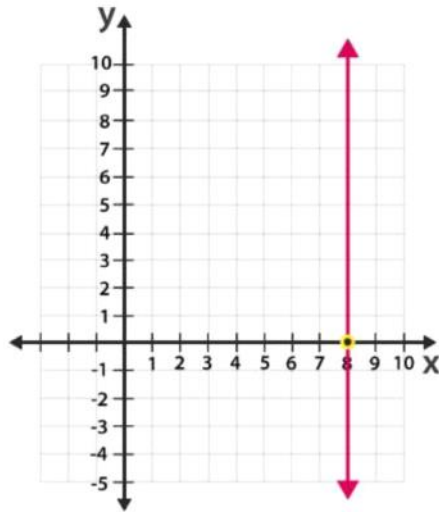
6. Give the value of each of the following:

a) $|-4|$

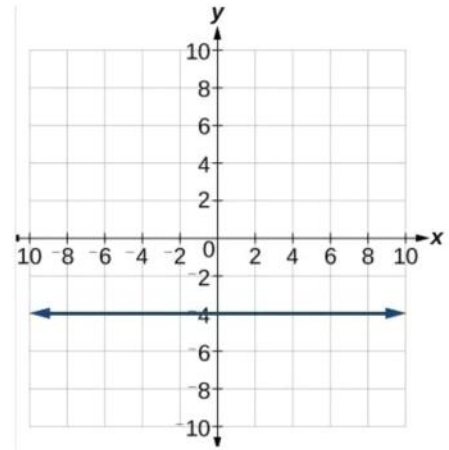
b) $|-7 + 2|$

7. Give the equation of each line pictured below:

a)



b)



8. If $f(x) = 5x - 21$, what is the value of $f(4)$?

Key

First Night Review Questions

1. Simplify each expression below completely.

a) $(3x^2y)^2 = \boxed{9x^4y^2}$

b) $(x-4)^2$

$$= (x-4)(x-4)$$

$$= x^2 - 4x - 4x + 16$$

$$= \boxed{x^2 - 8x + 16}$$

c) $(-6)^2 = \boxed{36}$

d) $-5^2 = \boxed{-25}$

e) $(2x-3)(x+5)$

$$= 2x^2 + 10x - 3x - 15$$

$$= \boxed{2x^2 + 7x - 15}$$

2. Solve.

a) $5x - 4 = 0$

$$5x - 4 + 4 = 0 + 4$$

$$\frac{5x}{5} = \frac{4}{5}$$

$$\boxed{x = \frac{4}{5}}$$

b) $x(x-5)(2x+3) = 0$

$$\boxed{x = 0}$$

$$x - 5 = 0$$

$$\boxed{x = 5}$$

$$2x + 3 = 0$$

$$2x = -3$$

$$\boxed{x = -\frac{3}{2}}$$

3.

This graph represents which of the following inequalities?



A. $x > 3$

B. $x < 3$

C. $x \geq 3$

D. $x \leq 3$

4. Factor.

a) $7x - 21$

$$= \boxed{7(x-3)}$$

b) $x^2 - 2x - 15$

$$= \boxed{(x+3)(x-5)}$$

c) $6x^2 + 19x + 10$

A = 6
B = 19
C = 10

AC = 60

Find two numbers that multiply to 60 and add to 19 } **4, 15**

$\therefore 2, 19x + 10$

Split up the middle term, into 2 terms.

d) $4x^2 - 9 = \boxed{(2x+3)(2x-3)}$

and add to 11 ✓

$$6x^2 + 19x + 10$$
$$= \underline{6x^2 + 4x} + \underline{15x + 10}$$

Split up
the middle term,
 $19x$, into 2 terms,
using the numbers
you found as
coefficients

$$= \underline{2x(3x+2)} + \underline{5(3x+2)}$$

Factor out the
greatest common factor
(GCF) from the
first 2 terms,
and from the
last 2 terms.

The bracketed terms
should be the same.

This means that we have $(3x+2)$ as a common factor:

$$2x(3x+2) + 5(3x+2)$$

Finish by factoring that out in front:

$$(3x+2)(2x+5)$$

5. Simplify.

$$\begin{aligned} \text{a) } \frac{2}{7} \times \frac{3}{4} &= \frac{6}{28} \\ &= \boxed{\frac{3}{14}} \end{aligned}$$

$$\begin{aligned} \text{b) } \frac{\left(\frac{1}{3}\right)}{\left(\frac{4}{5}\right)} &= \frac{1}{3} \times \frac{5}{4} \\ &= \boxed{\frac{5}{12}} \end{aligned}$$

$$\begin{aligned} \text{c) } \frac{1}{3} + \frac{4}{5} &= \frac{1}{3} \cdot \frac{5}{5} + \frac{4}{5} \cdot \frac{3}{3} \\ &= \frac{5}{15} + \frac{12}{15} \\ &= \boxed{\frac{17}{15}} \end{aligned}$$

6. Give the value of each of the following:

a) $|-4|$

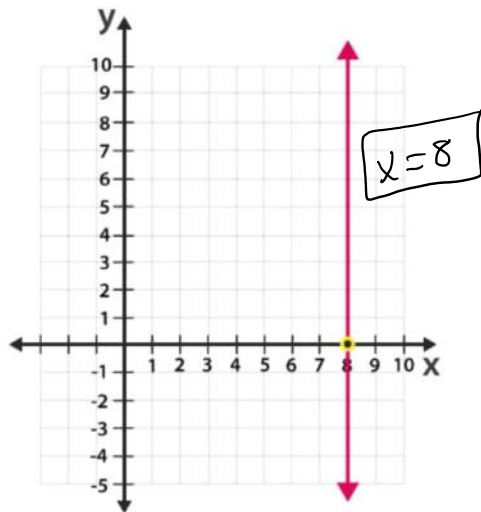
$$= \boxed{4}$$

b) $|-7+2|$

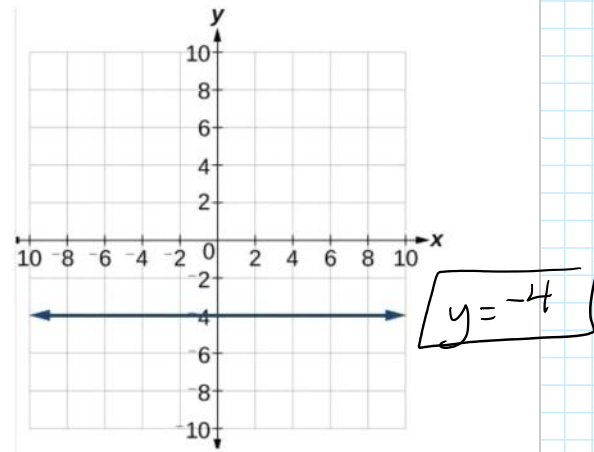
$$\begin{aligned} &= |-5| \\ &= \boxed{5} \end{aligned}$$

7. Give the equation of each line pictured below:

a)



b)



8. If $f(x) = 5x - 21$, what is the value of $f(4)$?

$$\begin{aligned} f(4) &= 5(4) - 21 \\ &= 20 - 21 \\ &= \boxed{-1} \end{aligned}$$