Student: yaser almohaws **Date:** 1/1/15 **Time:** 11:24 AM	**Instructor:** fahad aljabr **Course:** MATH-001: Fundamentals of Math 11415 **Book:** Bittinger: Introductory and Intermediate Algebra, 4e	**Assignment:** Week 3 Practice Exercises

1. Complete the table.

Quadrant	First Coordinate	Second Coordinate
?	positive	negative

Quadrant	First Coordinate	Second Coordinate
IV	positive	negative

(Type I, II, III, or IV.)

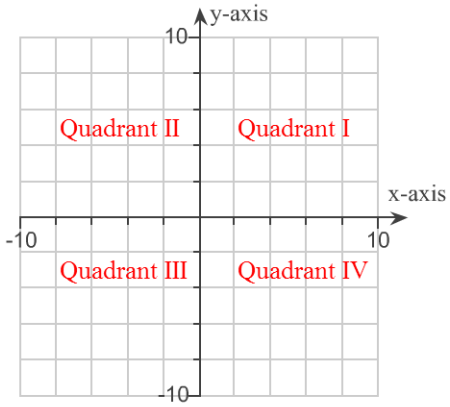
2. Complete the table.

Quadrant	First Coordinate	Second Coordinate
I	positive	?

Identify the second coordinate.

Quadrant	First Coordinate	Second Coordinate
I	positive	positive

3. In which quadrants are the signs of the first and second coordinate the same?



The signs of the first and second coordinate are always the same in quadrants I,III.

(Type I, II, III, or IV. Use a comma to separate answers as needed.)

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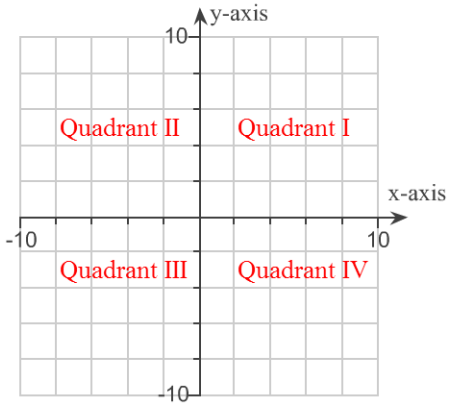
4. In which quadrants is the second coordinate positive?

The second coordinate is always positive in quadrants I,II .

(Type I, II, III, or IV. Use a comma to separate answers as needed.)

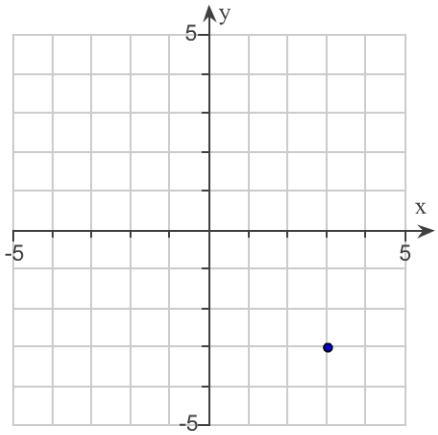


5. Find the coordinates of the point shown on the graph.

What are the coordinates of the point?

$(3,-3)$

(Type an ordered pair.)



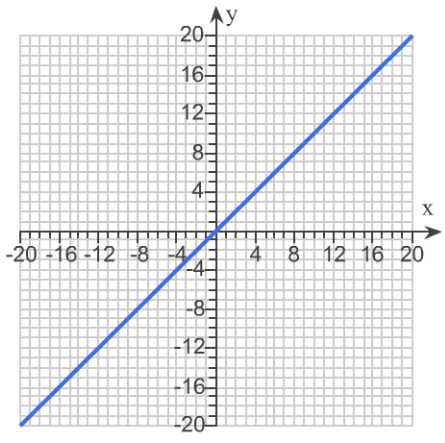
6. Graph the equation and identify the y-intercept.

$y = x$

Use the graphing tool on the right to graph the equation.

The y-intercept is $(0,0)$.

(Type an ordered pair.)



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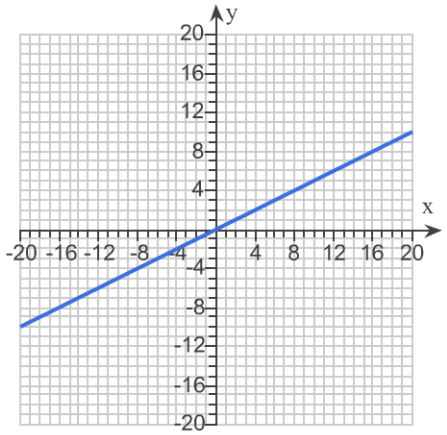
7. Graph the equation and identify the y-intercept.

$$y = \frac{1}{2}x$$

Use the graphing tool on the right to graph the equation.

The y-intercept is $(0,0)$.
(Type an ordered pair.)

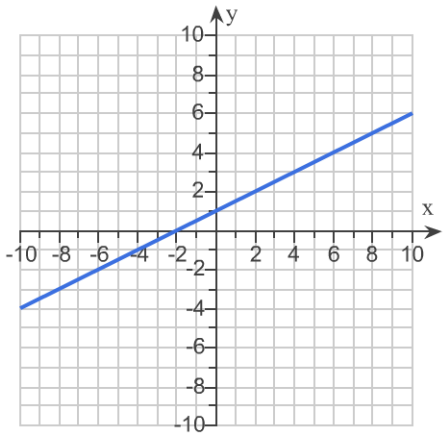


8. Graph the equation and identify the y-intercept.

$$y = \frac{1}{2}x + 1$$

Use the graphing tool on the right to graph the equation.

The y-intercept is $(0,1)$.
(Type an ordered pair.)

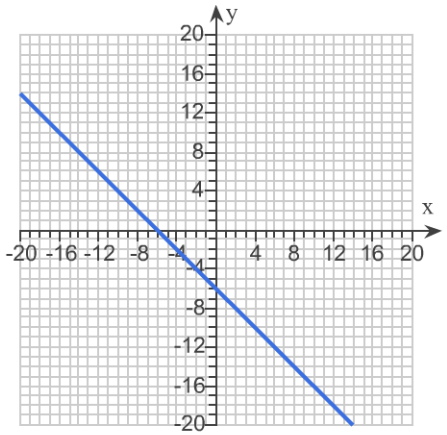


9. Graph the equation and identify the y-intercept.

$$x + y = -6$$

Use the graphing tool to graph the equation.

The y-intercept is $(0,-6)$.
(Type an ordered pair.)



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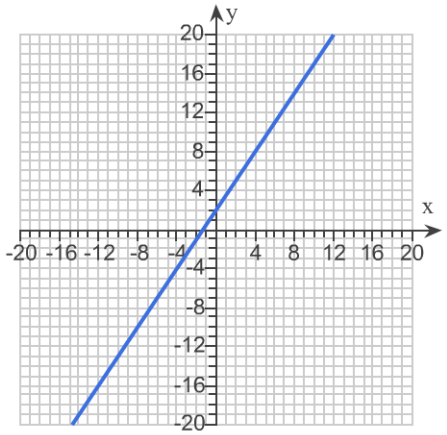
10. Graph the equation and identify the y-intercept.

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

Use the graphing tool on the right to graph the equation.

The y-intercept is $(0,2)$.
(Type an ordered pair.)

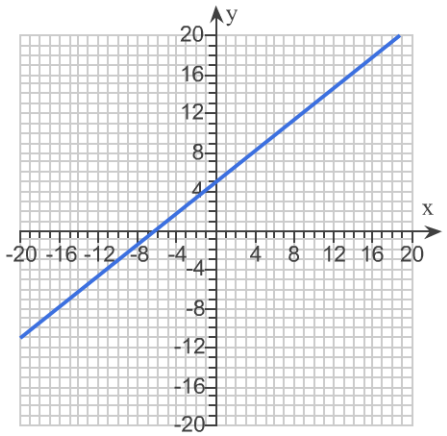


11. Graph the equation and identify the y-intercept.

$$4x - 5y = -25$$

Use the graphing tool on the right to graph the equation.

The y-intercept is $(0,5)$.
(Type an ordered pair.)



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12. The median annual income R, in dollars, for realtors has declined in recent years and can be approximated by $R = -1691t + 52{,}599$, where t is the number of years since 2002.
(a) Find the median income in 2002, in 2007 and in 2010.
(b) Graph the equation and then use the graph to estimate the median income in 2005.
(c) At this rate of decline, in what year will the median income be $37,380?

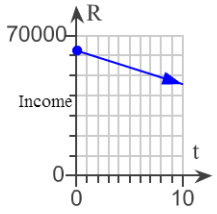
(a) The median income in 2002 is $ 52599 .

The median income in 2007 is $ 44144 .

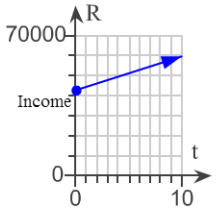
The median income in 2010 is $ 39071 .

(b) Choose the correct graph below.

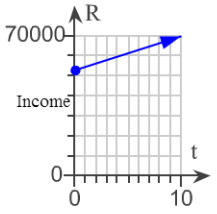
○ A.



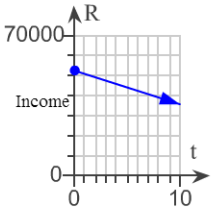
○ B.



○ C.



✓ D.



The median income in 2005 is about $47,500 .

(c) At this rate of decline, the median income will be $37,380 in year 2011 .

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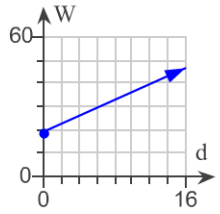
13. The average number of gallons W of bottled water consumed each year by the consumer can be approximated by $W = 1.7d + 19.25$, where d is the number of years since 2000.
(a) Find the average number of gallons of bottled water consumed in 2001 ($d = 1$), in 2010, and in 2015.
(b) Graph the equation and use the graph to estimate what the bottled water consumption was in 2008.
(c) In what year will bottled water consumption be about 38 gal?

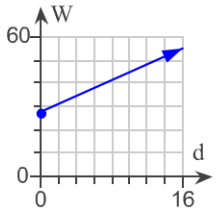
(a) The average number of gallons of bottled water consumed in 2001 was 20.95 gal.
(Type an integer or a decimal.)

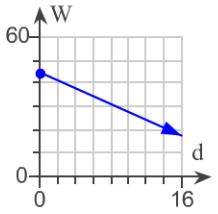
The average number of gallons of bottled water consumed in 2010 was 36.25 gal.
(Type an integer or a decimal.)

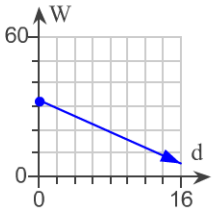
The average number of gallons of bottled water consumed in 2015 was 44.75 gal.
(Type an integer or a decimal.)

(b) Choose the correct graph below.

A.


B.


C.


D.


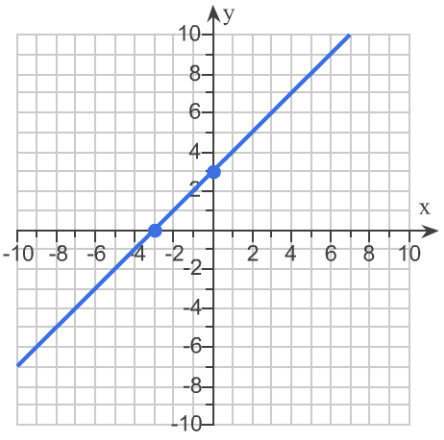
The bottled water consumption in 2008 was about 33 gal.

(c) The bottled water consumption will be about 38 gal in year 2011.

14. Find the intercepts and then use them to graph the equation.

$3y - 9 = 3x$

Use the graphing tool to graph the line. Use the intercepts when drawing the line. If only one intercept exists, use it and another point to draw the line.



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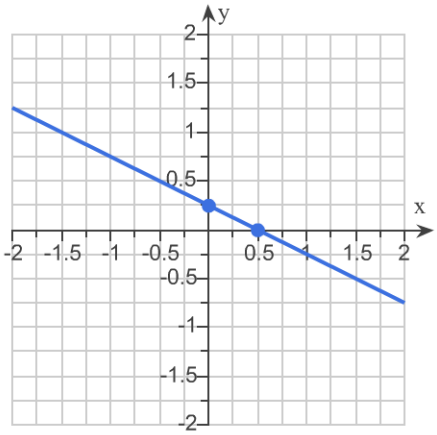
15. Find the intercepts. Then graph.

$2x + 4y = 1$

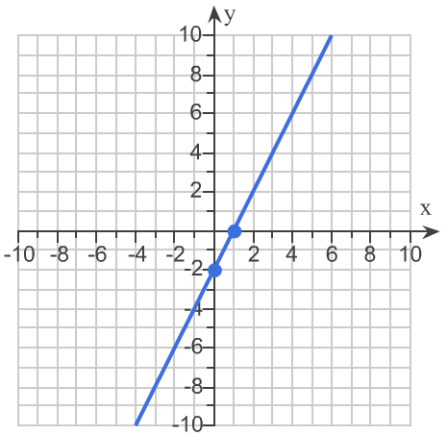
Use the graphing tool to graph the line. Use the intercepts when drawing the line. If only one intercept exists, use it and another point to draw the line.



16. Find the intercepts and then use them to graph the equation.

$2x - 2 = y$

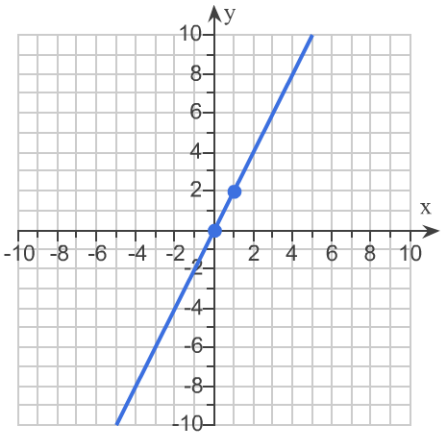
Use the graphing tool to graph the line. Use the intercepts when drawing the line. If only one intercept exists, use it and another point to draw the line.



17. Find the intercepts, and then use them to graph the equation.

$y - 2x = 0$

Use the graphing tool to graph the line. Use the intercepts when drawing the line. If only one intercept exists, use it and another point to draw the line.



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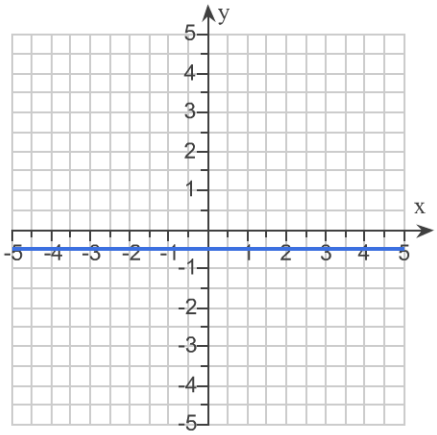
18. Graph the equation by plotting points.

$2y = -1$

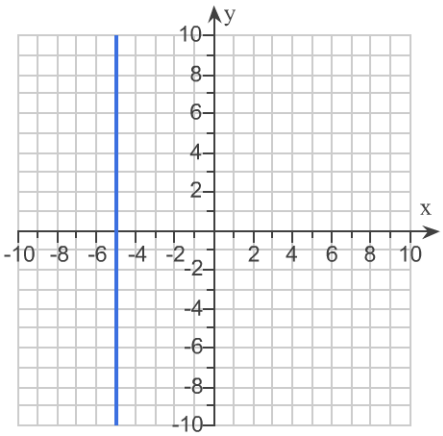
Use the graphing tool on the right to graph the equation.



19. Graph the equation by plotting points.

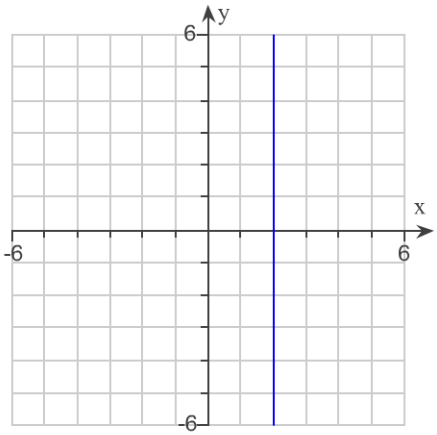
$2x + 10 = 0$

Use the graphing tool on the right to graph the equation.



20. Write the equation for the graph.

The correct equation is $X = 2$.



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21. Graph the line containing the given pair of points and find the slope.

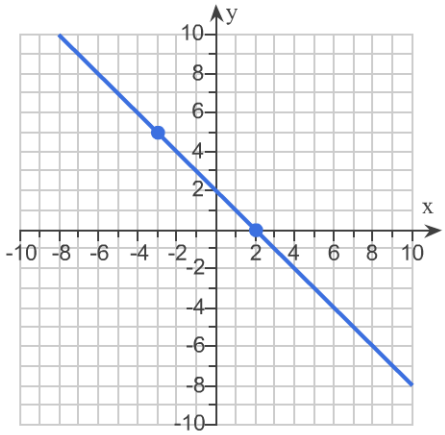
$(-3,5), (2,0)$

Use the graphing tool on the right to graph the line. Make sure to use the two given points when graphing the line.

Find the slope of the line. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. $m = -1$
(Type an integer or a simplified fraction.)

B. The slope is undefined.



22. Graph the line containing the given pair of points and find the slope.

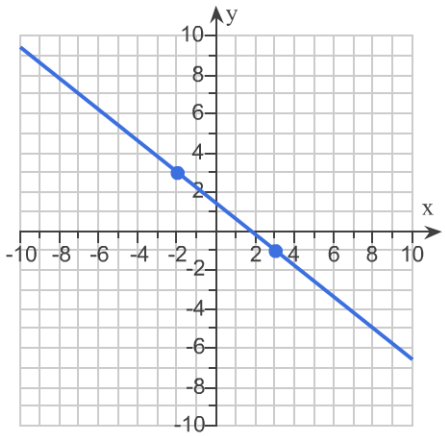
$(-2,3), (3,-1)$

Use the graphing tool on the right to graph the line. Make sure to use the two given points when graphing the line.

Find the slope of the line. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. $m = \frac{-4}{5}$
(Type an integer or a simplified fraction.)

B. The slope is undefined.



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23. Find the slope, if it exists, of the line containing the points $(4, -2)$ and $(4, -8)$.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. m = ☐ (Type an integer or a simplified fraction.)

B. The slope is undefined.

24. Find the slope of the line that passes through the given points.

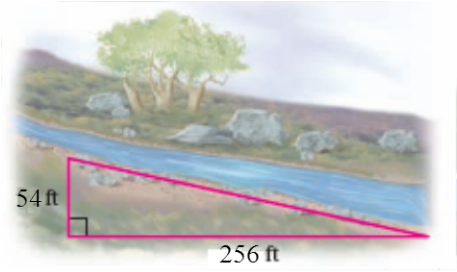
$(-6,5)$ and $(-3,3)$

Select the correct choice below and, if necessary, fill in the answer box within your choice.

A. The slope is $\frac{-2}{3}$. (Type an integer or a simplified fraction.)

B. The slope is undefined.

25. Find the slope of the river.



The slope of the river is $\frac{27}{128}$.

(Type an integer or a simplified fraction. Type a positive number.)

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26. The maximum grade allowed between two stations in a rapid-transit rail system is 3.5%. Between station A and station B, which are 270 ft apart, the tracks rise $8\frac{1}{2}$ ft. What is the grade of the tracks between these two stations? Round the answer to the nearest tenth of a percent. Does this grade meet the rapid-transit rail standards?

The grade of the tracks between station A and station B is 3.1 %.
(Type an integer or decimal rounded to the nearest tenth as needed.)

Does this grade meet the rapid-transit rail standards?

- ○ No
- ✓ Yes

27. Evaluate this expression.

$\left(\frac{4}{5}\right)^0$

$\left(\frac{4}{5}\right)^0 = 1$

28. Evaluate the expression.

6.33^0

$6.33^0 = 1$
(Simplify your answer. Type an integer or a decimal.)

29. Evaluate this expression.

$(wz)^1$

$(wz)^1 = wz$
(Simplify your answer.)

30. Evaluate.

vw^1

$vw^1 = vw$
(Simplify your answer.)

31. Evaluate $v^2 - 1$ when $v = -9$.

$v^2 - 1 = 80$
(Simplify your answer. Type an integer or a decimal.)

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32. Express using a positive exponent. Then simplify the expression.

10^{-6}

Write using a positive exponent.

$10^{-6} = \frac{1}{10^6}$

Evaluate.

The answer is $\frac{1}{1000000}$.

(Simplify your answer. Type an integer or a fraction.)

33. Express using a positive exponent.

$\frac{1}{r^{-7}}$

$\frac{1}{r^{-7}} = r^7$

(Simplify your answer. Type exponential notation with positive exponents.)

34. Multiply and simplify.

$(2r)^8 \cdot (2r)^9$

$(2r)^8 \cdot (2r)^9 = (2r)^{17}$

(Type exponential notation with positive exponents.)

35. Multiply and simplify.

$3^{-5} \cdot 3^8$

$3^{-5} \cdot 3^8 = 3^3$

(Type exponential notation with positive exponents.)

36. Multiply and simplify. Assume that variables represent nonzero real numbers.

$c^{-3} \cdot c^8 \cdot c^{-9}$

$c^{-3} \cdot c^8 \cdot c^{-9} = \frac{1}{c^4}$

(Simplify your answer. Type your answer using exponential notation. Use positive exponents only.)

37. Simplify. Assume that no denominator is 0.

$\frac{a^{12}}{a}$

$\frac{a^{12}}{a} = a^{11}$

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38. Divide and simplify.

$$\frac{19^4}{19^6}$$

$\frac{19^4}{19^6} = \frac{1}{19^2}$

(Type exponential notation with positive exponents.)

39. Divide and simplify.

$$\frac{(5a)^5}{(5a)^{11}}$$

$\frac{(5a)^5}{(5a)^{11}} = \frac{1}{(5a)^6}$

(Type exponential notation with positive exponents.)

40. Divide and simplify.

$$\frac{p^4}{p^{-4}}$$

$\frac{p^4}{p^{-4}} = P^8$

(Simplify your answer. Type exponential notation using positive exponents.)

41. Divide and simplify.

$$\frac{k^{-7}}{k^{-5}}$$

$\frac{k^{-7}}{k^{-5}} = \frac{1}{K^2}$

(Simplify your answer. Type exponential notation with positive exponents.)

42. Simplify the following. Write answers with positive exponents.

$$\frac{z^{-3}}{z^{-7}}$$

$\frac{z^{-3}}{z^{-7}} = z^4$ (Use positive exponents only.)

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43. Simplify.

a. 6^2 b. 6^{-2}

c. $\left(\frac{1}{6}\right)^2$ d. $\left(\frac{1}{6}\right)^{-2}$

e. -6^2 f. $(-6)^2$

a. $6^2 = 36$

b. $6^{-2} = \frac{1}{36}$

c. $\left(\frac{1}{6}\right)^2 = \frac{1}{36}$

d. $\left(\frac{1}{6}\right)^{-2} = 36$

e. $-6^2 = -36$

f. $(-6)^2 = 36$

44. Simplify.

$(m^9p^5)^{-8}$

$(m^9p^5)^{-8} = \frac{1}{m^{72}p^{40}}$

(Type exponential notation with positive exponents.)

45. Simplify.

$(9n^6s^{-7}x^{-6})^2$

$(9n^6s^{-7}x^{-6})^2 = \frac{81n^{12}}{s^{14}x^{12}}$

(Simplify your answer. Use positive exponents only.)

46. Simplify.

$\left(\frac{c^5p}{r}\right)^4$

$\left(\frac{c^5p}{r}\right)^4 = \frac{c^{20}p^4}{r^4}$

(Simplify your answer. Use positive exponents only.)

47. Simplify.

$\left(\frac{x^5h}{aw^6}\right)^{-5}$

$\left(\frac{x^5h}{aw^6}\right)^{-5} = \frac{a^5w^{30}}{x^{25}h^5}$

(Simplify your answer. Use positive exponents only.)

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48. Convert to scientific notation.

210,000,000,000

$210{,}000{,}000{,}000 = 2.1 \cdot 10^{11}$

(Use scientific notation. Use the multiplication symbol in the math palette as needed.)

49. Express the number 0.000723 in scientific notation.

$0.000723 = 7.23 \cdot 10^{-4}$

(Use scientific notation. Use the multiplication symbol in the math palette as needed.)

50. Convert to decimal notation.

8.78×10^{7}

$8.78 \times 10^{7} = 87800000$

(Simplify your answer. Type an integer or a decimal.)

51. Convert to decimal notation.

5.531×10^{-8}

$5.531 \times 10^{-8} = 0.00000005531$

(Simplify your answer. Type an integer or a decimal.)