



TEACHER GUIDE

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STUDENT HANDOUTS

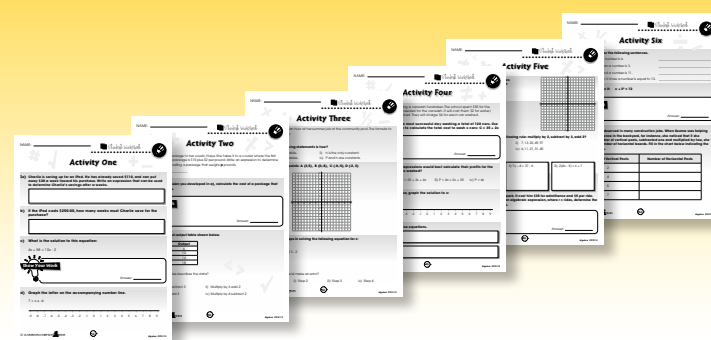
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Task Sheet 2

- 2a) Denise decides to sell her old bicycle by putting an ad in a local newspaper. The first newspaper tells her that there will be an initial cost of \$20 plus a charge of \$7 per day. If the total cost is represented by C , and the number of days by d , which equation represents this relationship?

- i) $C = 20d + 7$ ii) $C = 20 + 7d$
 iii) $C = (20 + 7)d$ iv) $C = 20 + 7 \div d$



- b) Denise feels that the newspaper is charging too much for the ad. She goes to someone advertising on a popular website to check the rates there. They inform Denise that there is no initial fee for her ad, but it will cost \$10.00 per day. If the ad runs for 7 days in each case, which is the better bargain?

Show Your Work

Answer: _____

- c) After all of Denise's hard work in establishing the best price for her ad, she finally goes with a third option. A small local newspaper publishes only three times per week and informs Denise she can run it for three days at an initial cost of \$12 and a daily rate of \$5. Which formula represents the cost to Denise?

- i) $C = 12 + 5 + d$ ii) $C = 5 + 12d$ iii) $C = 12 + 5d$ iv) $3C = 12 + 3d$

- d) Denise is a little concerned with the amount of profit she will make from selling her bike. Using your results in c) to determine the cost of advertising, calculate her profit if she sells the bike for \$87.50.

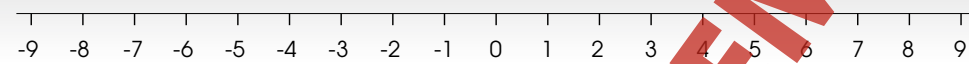
Show Your Work

Answer: _____

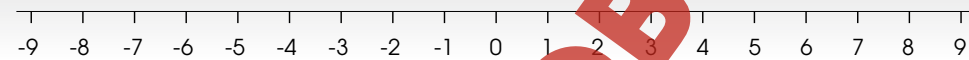
Task Sheet 5

- 5) Graph each letter on the accompanying number line.

a) $4 > x > -2$



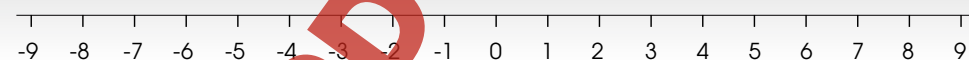
b) $8 \geq x > -8$



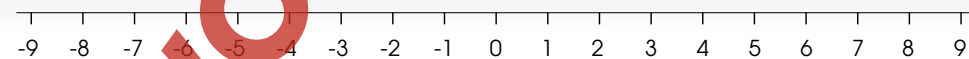
c) $x = -2.5$ $y = 7$



d) On the number line below, graph the solution to x . $x + 4 = -2$



e) On the number line below, graph the solution to x . $-(-2) + x + 5 = 7$



Explore With Technology

Compare the answers given when you enter $25 - 5 \times 3$...
 ... On a scientific calculator =
 ... On a basic calculator =



- 2a) Solve these equations:

Ex: $2 - (-x) = 5$ $x = 5 - 2$ $x = 3$

- i) $-14 - (-a) = 10$ ii) $10 + g = 24$
 iii) $t + 3.5 = 2.5 - 2.5$ iv) $15x + 4 + 3x - 1 = 21$



- b) Write an algebraic expression for each phrase:

- i) Forty-four times a number _____ ii) A number decreased by ten _____
 iii) A number added to thirty _____ iv) Sixty more than a number _____

- c) Evaluate each algebraic expression with the given values.

Ex: $3x - y$; where $x = 2$, and $y = 1$ i) $4y + x$; where $x = 3$, and $y = 2$
 $3(2) - 1 = 6 - 1 = 5$

ii) $a2 + b$; where $a = 6$, and $b = 3$ iii) $6(y - x)$; where $x = 2$, and $y = 4$

- d) Solve each equation for the variable given. Ex: $5x = 60$ $60 \div 5 = 12$ $x = 12$

- i) $10a = 150$, $a =$ _____ ii) $2b = 36$, $b =$ _____
 iii) $4c = 64$, $c =$ _____ iv) $8d = 88$, $d =$ _____

Reflection

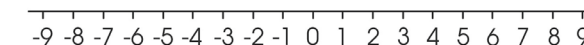
Ralph shows his steps in solving the following equation for a :
 $3a - a - 5 = 1$

Step 1: $3a - a - 5 + 5 = 1 + 5$ Step 2: $3a - a = 6$
 Step 3: $3/a = 6$ Step 4: $a = 2$

Ralph arrives at the incorrect answer. One of his steps contains a critical error. In which step did Ralph make an error and what should the correct answer be?

- 7a) Graph the solution to x on the number line.

$x + 5 = -2$



- b) Solve each equation for the variable given.

i) $9a + 12 = 39$ ii) $-4b - 9 = -45$ iii) $7c + 5 = 14$ iv) $3d \times 6 = 72$

- c) The following pattern increases by the following rule: multiply the previous term by 4 and add 11.

21, 95, _____, 1575

What is the missing term in the sequence? Answer: _____

- d) Solve each equation. Ex: $\sqrt{x} = 3$ $x = 3 \times 3$ $x = 9$

i) $\sqrt{x} = 10$ ii) $\sqrt{x} = 9$

- e) Solve each proportion. Ex: $10 \div 5 = x \div 6$ $2 = x \div 6$ $x = 2 \times 6$ $x = 12$

i) $10 \div 8 = x \div 10$ ii) $6 \div 4 = x \div 3$ iii) $5 \div 3 = x \div 6$
 iv) $3 \div 5 = x \div 8$ v) $2 \div 4 = x \div 5$ vi) $9 \div 10 = x \div 4$

- f) Simplify each expression.

Ex: $\frac{10x^2}{8x} = \frac{10x^2 \div 2}{8x \div 2} = \frac{5x}{4}$

i) $\frac{-30x^6}{42x^2} =$ ii) $\frac{12y^2}{12y^3} =$ iii) $\frac{12z^2}{28z} =$ iv) $\frac{36a^2}{20a} =$



Drill Sheet 1

- a) If $x = 3$ and $y = 4$, which expression below has the largest value?
 i) xy^2 ii) x^2y iii) $x^2 + y^2$ iv) $x^2 - y^2$
- b) Jane and Letitia are having a number of flyers printed advertising their upcoming yard sale. The cost of printing is represented by the formula $C = 25 + 0.05f$ (f = flyers). The number of flyers they can afford to print is limited by their budget, so they gave the printer the following chart. Fill in the chart using the above formula.

Number of Flyers	Total Cost
250	
500	
600	
750	

- c) Which number completes this pattern?
 7, 13, 10, 16, 13, 19, ____
 Answer: _____
- d) Simplify the following expression and choose the correct answer.
 $(x^2 + 3x + 2) + x(2 - x)$
 i) $x + 2$ ii) $5x$ iii) $5x + 2$ iv) $2x^2 + 5x + 2$
- e) On a trip to the amusement park, Fred spends most of the day on the roller coaster rides. Each ride costs \$5. In addition to the cost of each ride, Fred pays \$12 to enter the park itself. Which equation below represents the amount of money Fred will spend to go on x rides? (C = total cost)
 i) $C = 5x - 12$ ii) $C = 5x + 12$ iii) $C = 12x - 5$ iv) $C = 12x + 5$



Review B

- a) Ike's school decides to hold a carwash fundraiser for their school trip. The school spends \$40 for all the equipment needed for the carwash. They end up paying \$3 for water/supplies for each car they wash. They charge \$6 for each car washed. The formula used to calculate their earnings is $E = 6x - (3x + 40)$, where E = Earnings and x = cars.

Calculate their profit if they wash 50 cars:

Show Your Work



Answer: _____





- b) On the number line below graph the solution to x
 $-2x = -6$
- 9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9
- c) Solve these equations showing your work:
- i) $3x + 7 = 19$ ii) $17 - x = 4$
- d) Simplify the following equation:
 $4x^2 - 2x + 6 + 3x - x^2$



Review C

- a) Graph the solution to x on the number line. $x + 7 = -1$
- 9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9
- b) Solve each equation.
 i) $\sqrt{x} = 8$ ii) $\sqrt{x} = 11$
- c) Evaluate each algebraic expression with the given values.
 i) $10a + b$; where $a = 7$, and $b = 8$ _____
 ii) $7x + 2y$; where $x = -3$, and $y = 11$ _____
- d) Solve:
 i) $-3.3 + d = 12$ ii) $7 - (-x) = 19$ iii) $72 + c = 99 - 19$
 iv) $-32 = -6x - 2x$ v) $88 = 6 - 7x + 12$
 vi) $4x - 2x = -22 + 3x$ vii) $x + 11 = -6x + 18$
- e) Simplify the following expressions.
 i) $3(3x^2 - 4x + 6) + 3x(2x - 8)$ ii) $x(-2x^2 - 5x + 9) + 4x(x - 10)$
 iii) $7(2x^2 - 5x + 8) - 3x(11x - 2)$ iv) $-3x(6x + 8x + 23) + 6x(3x - 2)$
- f) What is the missing term in these patterns?
 i) 13, 24, 35, 46, _____ ii) -9, -30, _____, -72, -93
- g) Write as a scientific or standard notation.
 i) 76800 = _____ ii) $9.14 \times 10^5 =$ _____

Graphing, Values, Patterning,
Algebraic Expressions, Quotients

- a) Graph the following on the accompanying number line: _____
- 9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9
- b) Find the value of y x _____ if:
 i) $y =$ _____ ii) $y =$ _____ iii) $y =$ _____
- c) What is the _____ figure in this pattern?
-    
- d) Write an algebraic expression for each phrase:
 i) _____ times a number = _____
 ii) A number decreased by _____ = _____
- e) Complete the following patterns:
 i) 17, _____, _____
 ii) _____, -23, _____, _____
- f) Find each Quotient.
 i) $6 \div$ _____ = _____ ii) _____ \div _____ = _____ iii) _____ \div _____ = _____

NAME: _____



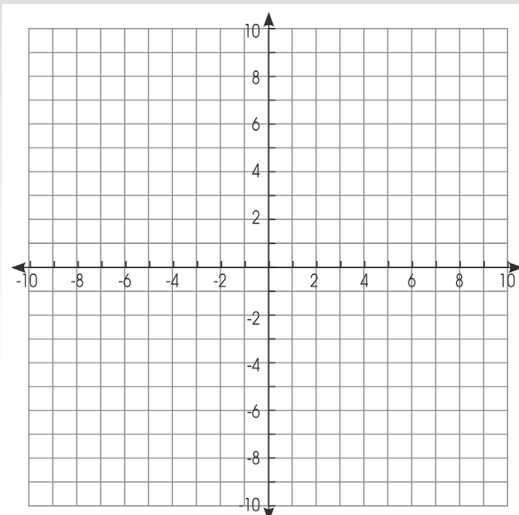
11a) Plot the following coordinates on the accompanying grid.

A = (1, 3)

B = (0, -5)

C = (-6, -4)

D = (8, 0)



b) What is the missing term in these patterns?

i) 12, 24, 48, 96, _____

ii) 1024, 512, 256, _____, 64

c) Simplify the following expressions.

i) $2(2x^2 - 4x + 3) + 2x(3x - 7)$

ii) $(-x^2 - 3x + 6) + 3x(2x + 13)$

iii) $5(3x^2 - 2x + 1) - 4x(2x - 9)$

iv) $-x(2x + 4x + 3) + 2x(2x - 4)$

d) Solve each equation.

i) $\sqrt{x} = 8$

ii) $\sqrt{x} = 12$

iii) $4.6x + 1 = x$

iv) $y + 2 = 5.3$

v) $x + 3/5 = 4/5$

vi) $y \times 1/7 = 5/7$

e) Solve each proportion.

i) $7 \div 10 = x \div 4$

ii) $3 \div 5 = x \div 12$

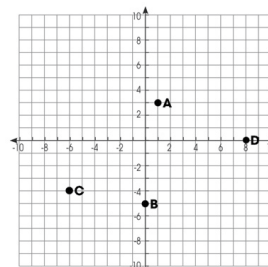
iii) $2 \div 4 = x \div 5$

iv) $2 \div 3 = x \div 15$



11.

a)



b)

i) 192 ii) 128

c)

i) $10x^2 - 22x + 6$
ii) $5x^2 + 36x + 6$
iii) $7x^2 + 26x + 5$
iv) $-2x^2 - 11x$

d)

i) $x = 64$ ii) $x = 144$
iii) $x = 4.6$ iv) $y = 3.3$
v) $x = 1/5$ vi) $y = 5$

e)

i) $x = 2.8$ ii) $x = 7.2$
iii) $x = 2.5$ iv) $x = 10$



12.

a)

i) $n + 32$
ii) 6×2

b)

i) $a = 4$ ii) $b = -3$
iii) $c = 8$ iv) $d = 11$

c)

2289

d)

i) $x = 3$ ii) $x = -10$
iii) $x = 2$ iv) $x = 1$

e)

i) $-5x/2$ ii) $1/3y^2$
iii) $\frac{3}{3x+2}$ iv) $\frac{6y-1}{8}$
v) $8/21$ vi) $9/20$
vii) $27/50$ viii) $5/6$
ix) $1 \frac{1}{6}$

40

13.

a)

i) $a = 18, b = 4$
ii) $e = 3$
iii) $f = 3, g = 30$
iv) 16 v) 108

vi) $a = 19$ vii) $b = 7$

viii) $c = 57$
ix) $d = 12.9$

x) $e = 16$ xi) $f = 15$

xii) $g = 4.45$
xiii) $h = -8.1$

xiv) $i = 4$ xv) $j = 48$

b)

= (-7, 2)

= (9, -4)

= (-4, -3)

= (10, 6)

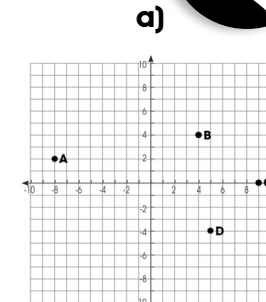
= (5, 4)

= (5, 4)

41

14.

a)



b)

i) $c = 17$ ii) $c = 45$
iii) $c = 72.6$ iv) $c = 8$

c)

i) $8x^2 + 4x + 2$
ii) $2x^2 + 2x + 8$
iii) $-3x$ iv) $9x^2 + x + 3$

d)

i) $x = 9$ ii) $x = -27$
iii) $x = -3$ iv) $x = 3$

e)

i) $x = 2$ ii) $x = -8$
iii) $x = -3$ iv) $x = 6$

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EASY MARKING ANSWER KEY