ALGEBRA SKILL REVIEW

- Print scavenger hunt
- Digital self guided activity
- Additional practice worksheet

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ACTIVITY INFORMATION

Printable Scavenger Hunt (pages 6 – 24)

- Print all scavenger hunt pages 1 sided. (pgs. 6 – 16)
- Print the blank student work page. (pgs. 23 – 24)
- Setting up the activity → each question should be taped around the room.
- Using the hint portion at the bottom of each question page:
    - Leave them attached to the bottom of the question paper.
    - Cut them off and tape them under the top half with the question for students to only see after trying the problem for themselves first.
    - Keep them all in a separate hint table location.
- Print Calculator "how to" pages (pgs. 17 – 22)
    - These can be set up in a central location or taped up next to the questions they correspond to.

Google Slides Self Guided Practice (linked below)

- Students will need to use this activity in presentation mode and progress through the activity by clicking the buttons on each slide. They should NOT use their arrow keys
- This is a multiple choice guided practice.
    - Students will be given a question to answer and choices to click along the right side of the slide.
    - If the wrong answer is clicked, they will be given some hints to help them with the questions, then click continue to go back and try the question again.
    - When the correct answer is clicked, they will shown some ways to check their answer with a TI-84 calculator.
- Students can use the same work sheet as the print version to show their work. They will just not fill in the circle tracker or need to follow the arrows.

Additional Practice Worksheet (pgs. 25 – 26)

- After completing one of the 2 activities above, students can work through this practice worksheet which includes more of the same types of problems to continue practicing the skills they reviewed.

ACTIVITY LINK CLICK HERE

1

PREVIOUS ANSWER
perpendicular

Solve the equation.

$$5x - 8 = 22$$

HINT FOR #1

Remember your order of operations for solving.

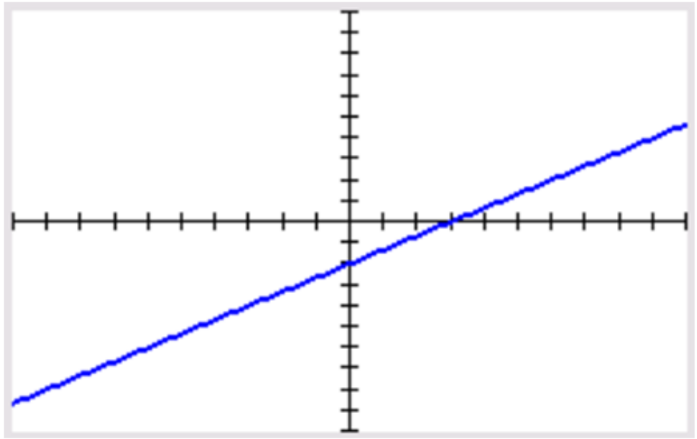
1st: Undo adding or subtracting with the opposite operation.

$$5x - 8 = 22$$

2nd: Undo multiplying or dividing with the opposite operation.

2

PREVIOUS ANSWER



Graph.

$$y=-6x+5$$

HINT FOR #2

Graphing in slope intercept form

$y = mx + b$

1st: Plot the y-intercept on the y-axis.

$$y=-6x+5$$

$$m=\frac{-6}{1}$$

2nd: Apply the slope as rise over run from the y-intercept to plot another point.

3

PREVIOUS ANSWER

$3\sqrt{2}$

Simplify. No decimals.

$$\sqrt{80}$$

HINT FOR #3

Think about what whole numbers multiply to the number inside the radical.

Example: $\sqrt{60}$

Use a Factor Tree and any pairs come outside the radical and any non pairs stay inside the radical.

$20 \cdot 3$

$4 \cdot 5$

$2 \cdot 2$

$=2\sqrt{15}$

OR.

Example: $\sqrt{60}$

Find the largest perfect square that is a factor of the number inside the radical.

$\sqrt{4} \cdot \sqrt{15}$

$=2\sqrt{15}$

4 is the biggest perfect square.

4

PREVIOUS ANSWER

$6x(3x+1)$

Factor.

$$x^2 - 2x - 35$$

HINT FOR #4

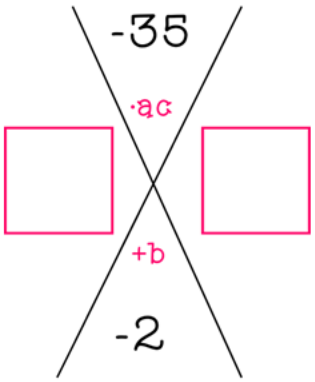
Look for 2 integers that multiply to "a·c" and add to "b".

$ax^2 + bx + c$

Factors of 35

1 · 35

5 · 7



Because a = 1, you can put the factors right into your answer!

$(x \square)(x \square)$

5

PREVIOUS ANSWER

parallel

Determine if the lines are parallel, perpendicular or neither.

$$-2x+y=9$$

$$y=-\frac{1}{2}x-7$$

HINT FOR #5

Comparing lines in slope intercept form

$y = mx + b$

1st: Rewrite the equations into slope intercept form if not already in that form by isolating y.

$$-2x+y=9$$

$$y=-\frac{1}{2}x-7$$

2nd: compare the slopes of the lines.

Same slope = parallel

Opposite reciprocal slope = perpendicular

6

PREVIOUS ANSWER

6

Solve the equation.

$$3(2x - 4) - 5 = 7x + 11$$

HINT FOR #6

Remember your order of operations for solving.

1st: Distribute the 3 to each term inside the parenthesis. Then combine like terms on the same side of the equal sign.

$$3(2x - 4) - 5 = 7x + 11$$

2nd: Move all variables to one side and the constants (just numbers) to the opposite side.

Then do the opposite operations like you did on the previous equation.

7

PREVIOUS ANSWER

$(x+5)(x-7)$

Factor.

$$4x^2 + 33x - 27$$

HINT FOR #7

Look for 2 integers that multiply to "a·c" and add to "b".

$ax^2 + bx + c$

Example: $4x^2 - 43x - 60$

$4x^2 + \boxed{-48x} + \boxed{5x} - 60$

GCF: 4x GCF: 5

-240 (·ac)

5 | -48

-43 (+b)

$4x(x - 12) + 5(x - 12)$

$$\boxed{(4x + 5)(x - 12)}$$

8

PREVIOUS ANSWER

-28

Simplify. No decimals.

$$\sqrt{18}$$

HINT FOR #8

Think about what whole numbers multiply to the number inside the radical.

Example: $\sqrt{60}$

Use a Factor Tree and any pairs come outside the radical and any non pairs stay inside the radical.

$20 \cdot 3$

$4 \cdot 5$

$2 \cdot 2$

$=2\sqrt{15}$

OR.

Example: $\sqrt{60}$

Find the largest perfect square that is a factor of the number inside the radical.

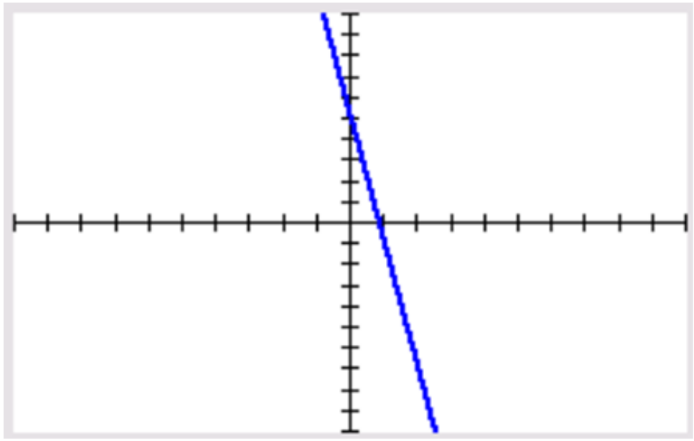
$\sqrt{4} \cdot \sqrt{15}$

$=2\sqrt{15}$

4 is the biggest perfect square.

9

PREVIOUS ANSWER



Determine if the lines are parallel, perpendicular or neither.

$y=3x-8$

$y=3x-1$

HINT FOR #9

Comparing lines in slope intercept form

$y = mx + b$

1st: Rewrite the equations into slope intercept form if not already in that form by isolating y.

$y=3x-8$

$y=3x-1$

2nd: compare the slopes of the lines.

Same slope = parallel

Opposite reciprocal slope = perpendicular

10

PREVIOUS ANSWER

$(4x-3)(x+9)$

Graph.

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

HINT FOR #10

Graphing in slope intercept form

$y = mx + b$

1st: Plot the y-intercept on the y-axis.

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

2nd: Apply the slope as rise over run from the y-intercept to plot another point.

11

PREVIOUS ANSWER

$4\sqrt{5}$

Factor.

$$18x^2 + 6x$$

HINT FOR #11

Look for the greatest common factor for the numbers and for the variables to divide out of <u>every</u> term.

Factors of 18		Factors of 6
$1 \cdot 18$	$3 \cdot 6$	$1 \cdot 6$
$2 \cdot 9$		$2 \cdot 3$

Factors of x^2	Factors of x
$x \cdot x$	x

Look for the largest number all coefficients/constants share in common and the largest amount of variables each term shares in common.

CALCULATOR "HOW TO" STEPS

Scavenger Hunt question alignment

A. Checking Equation Solutions (1, 6)
B. Finding factors (3, 8)
C. Finding GCFs (11)
D. Finding factor pairs (4, 7)
E. Graphing in y=mx+b form (2, 5, 9, 10)

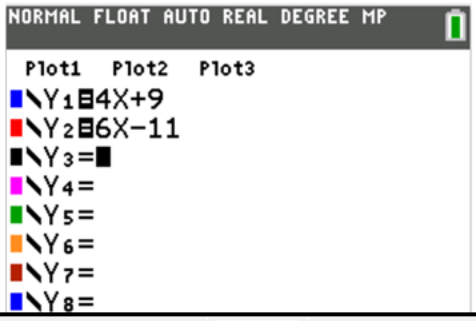
A

CHECKING EQUATION SOLUTIONS

Ex: Solve the equation.

$$4x + 9 = 6x - 11$$

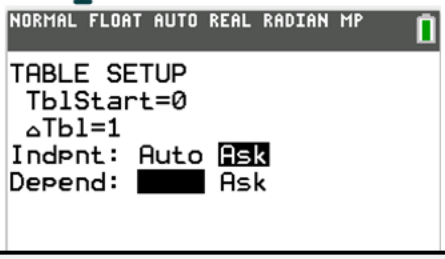
Step 1:



Buttons: y=

y_1 = Left side of equal sign
y_2 = Right side of equal sign

Step 2:



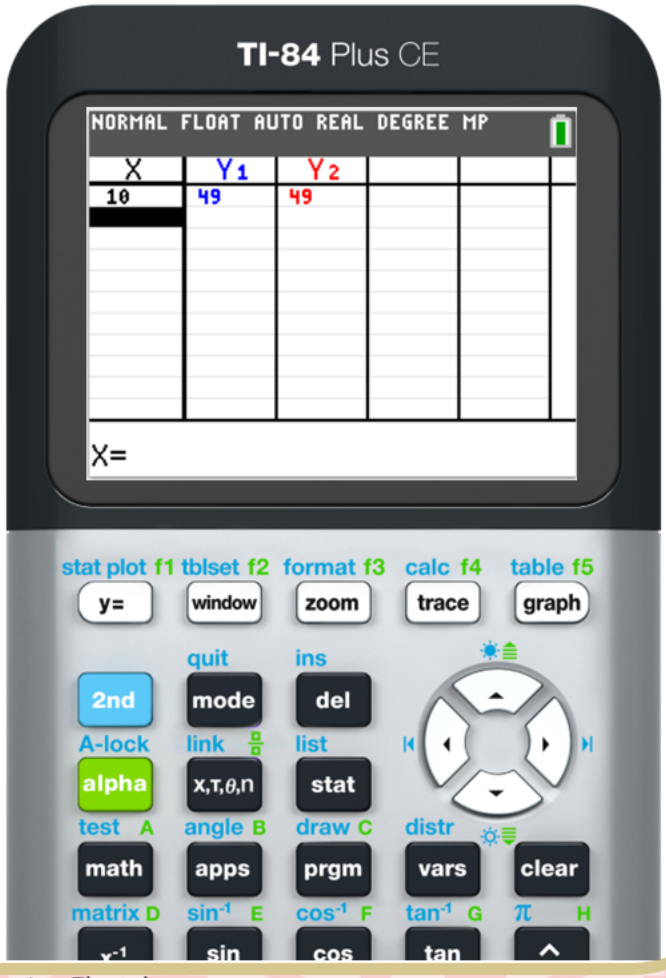
Buttons: 2nd, window, ▼ 2, ▶, enter

Make sure Indpnt: has "ask" selected with the black box. (Set back to "Auto" when done checking solutions)

Step 3:

Buttons: 2nd, graph, Type answer, enter

If x value is correct y_1 and y_2 should have the same value.

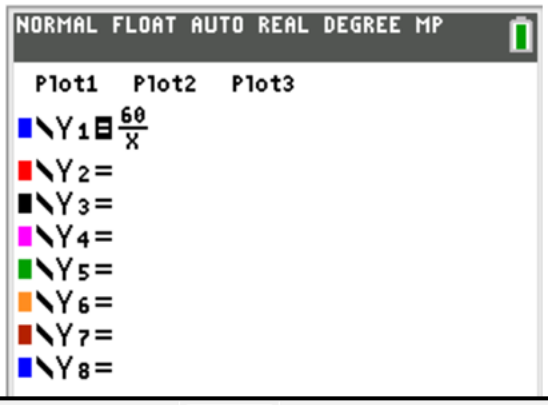


B

SIMPLIFY RADICALS BY FINDING FACTORS

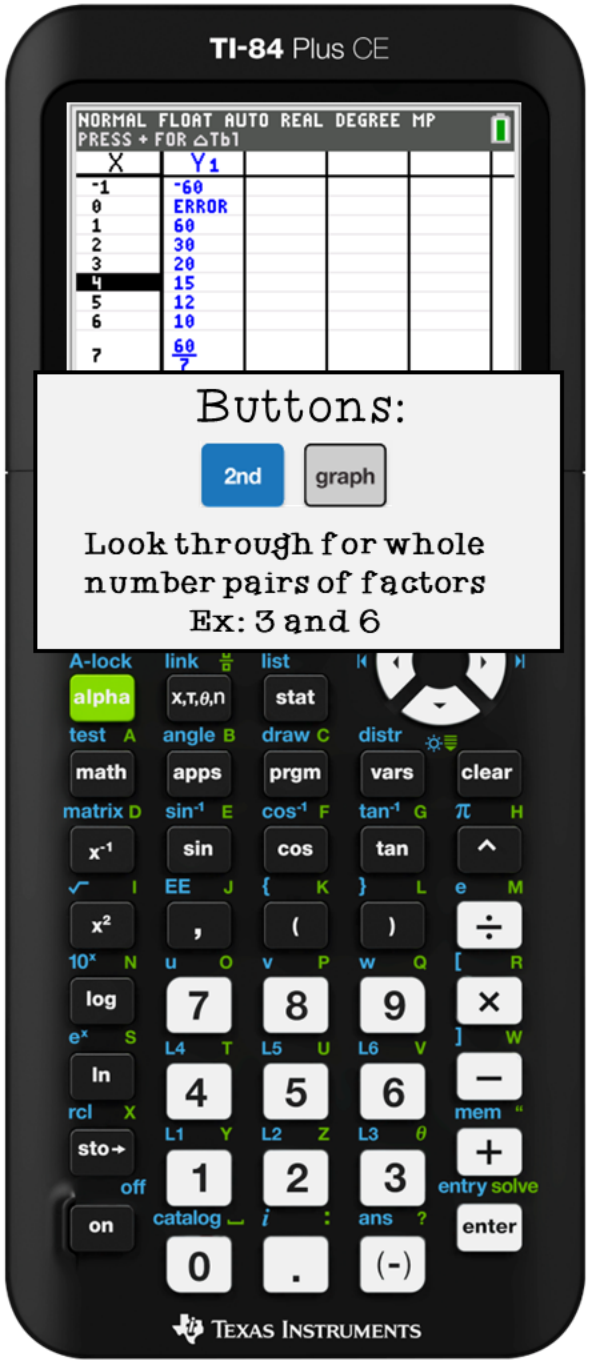
Ex: Simplify $\sqrt{60}$

Step 1:

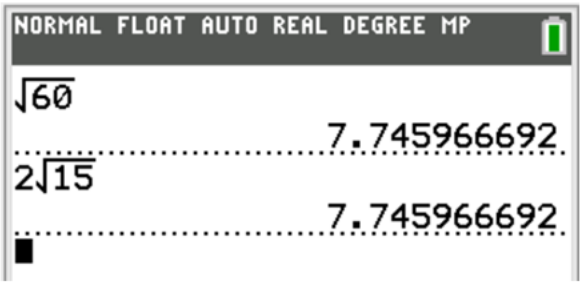


Buttons: [y=] $\frac{\text{Number in radical}}{x}$

Step 2:



Checking answers:



Type the original radical in and then the simplified radical.

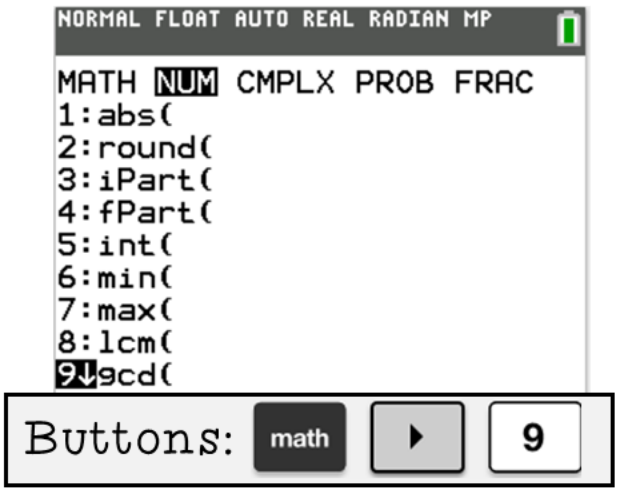
The answers for each should match!

C

FINDING GREATEST COMMON FACTORS

Ex: Factor. $9x^2+6x$

Step 1:

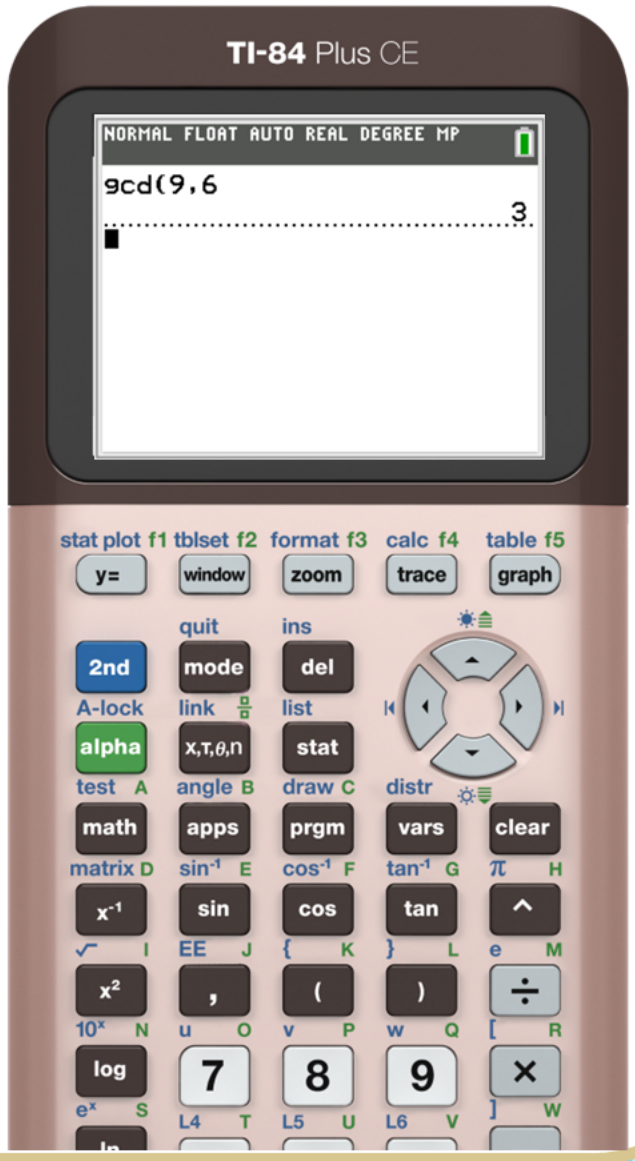


Buttons: math ▶ 9

If there is a 3rd term, find the GCF of the first 2 terms then use that GCF and the 3rd term to find the final GCF of all terms.

Step 2:

Type in the 2 numbers you are looking for the greatest common factor of separated by a comma (button above the 7).

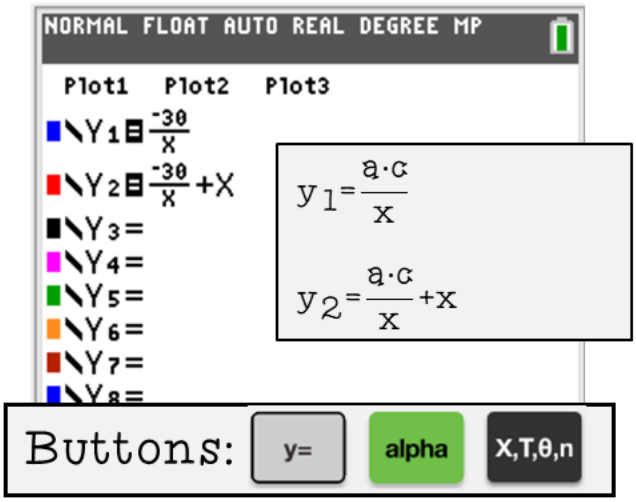


D

FACTORING QUADRATIC TRINOMIALS BY FINDING FACTORS

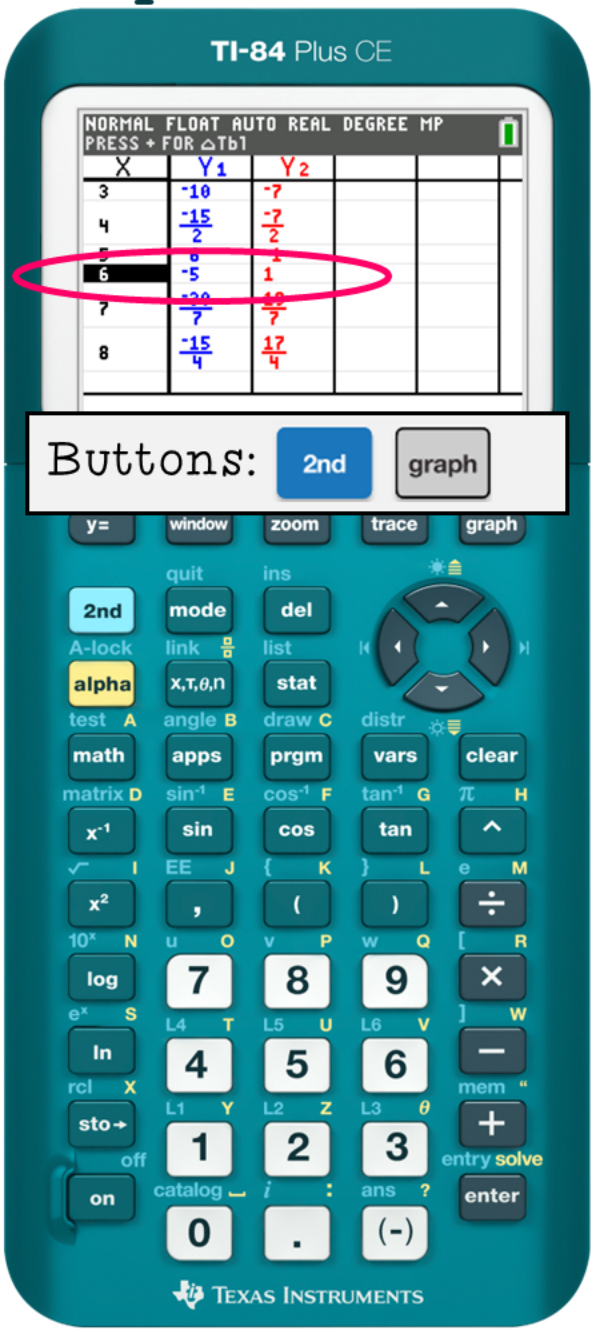
Ex: Factor. $2x^2+x-15$

Step 1:



Look for "b" in the y_2 column. Once you find it, the x and y_1 values in the same row are the two factors you want to use.

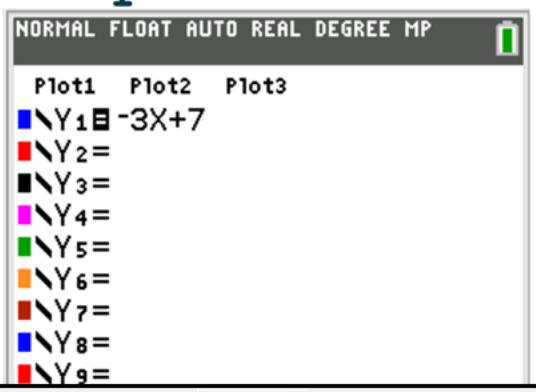
Step 2:



E GRAPHING LINES IN SLOPE INTERCEPT FORM

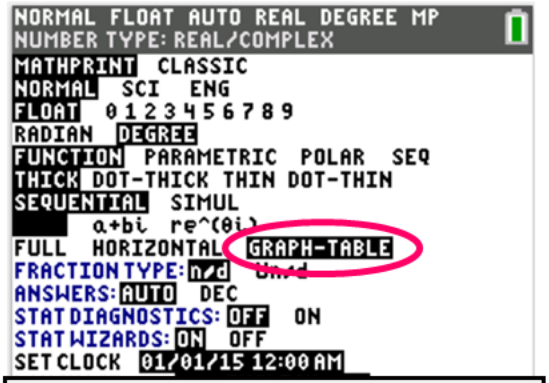
Ex: Graph y=−3x+7

Step 1:



Buttons: [y=] Type equation

Step 2:



Buttons:

[mode] [▼ 7] [▶ 2] [enter]

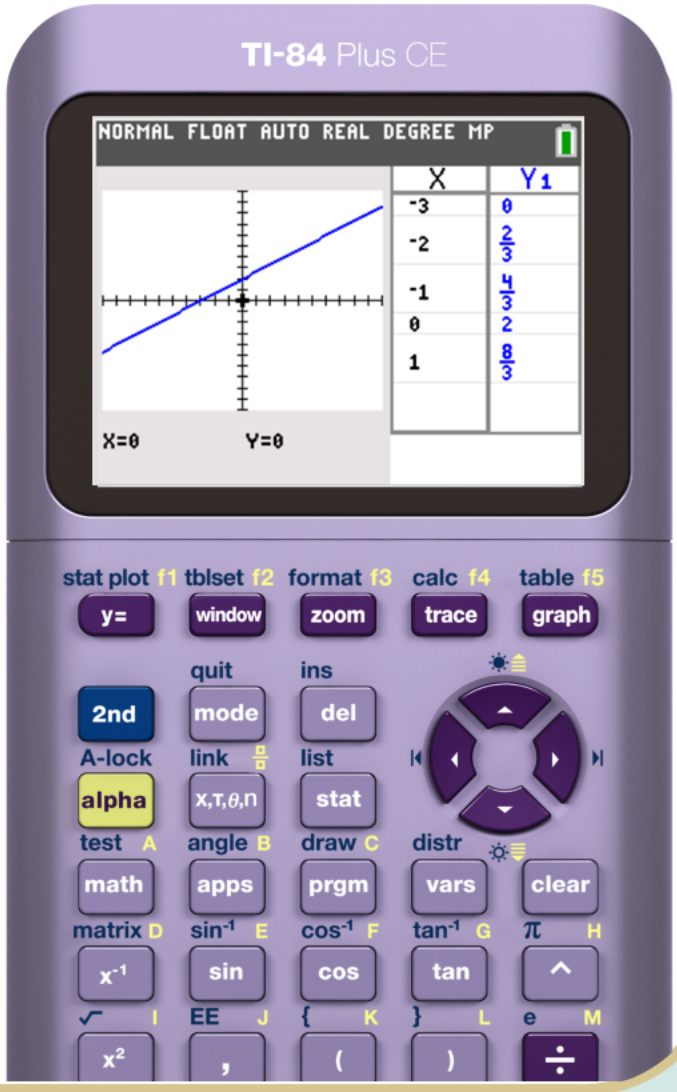
Make sure the black box is around the "graph-table" option to see the graph and table side by side.

Step 3:

Buttons: y=-3x+7

To move to different values in the table:

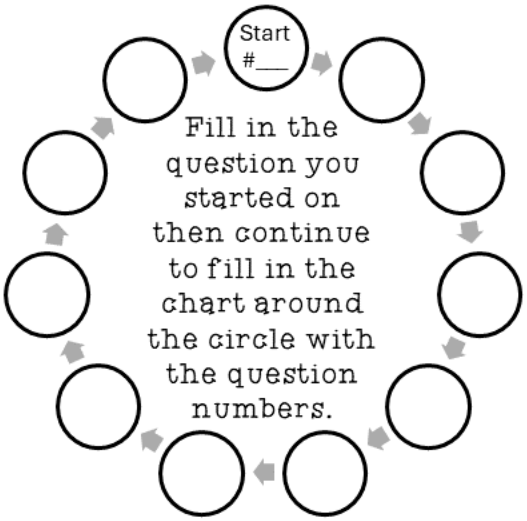
Buttons: Ex: Graph y=-3x+7



Name: _____ Date: _____

ALGEBRA SKILLS REVIEW PRACTICE

Directions: Start at one of the stations around the room, write the question number on the first box. Complete the problem then look for the answer at the top of another paper. Make sure to show your work. If you don't see your answer, go back and try it again. Continue until all 11 questions have been answered.



Question #____

Question #____

Question #____

Question #____

Question #____

Flip to back

Question #____

Question #____

Question #____

Question #____

Question #____

Question #____

Name: _____ Date: _____

ALGEBRA SKILLS REVIEW ADDITIONAL PRACTICE WORKSHEET

Topic 1: Solving Equations → Solve for the value of x.

1. $-8x - 9 + 2x + 3 = 90$	2. $21 + 26x + 4 + 5x = 180$	3. $7x - 12 = 4x + 18$

Topic 2: Simplifying Radicals → Simplify each radical with no decimals.

4. $\sqrt{98}$	5. $\sqrt{320}$	6. $\sqrt{243}$

Topic 3: Factoring → Factor each polynomial completely.

7. $4x^2 - 36x$	8. $x^2 + 5x - 24$

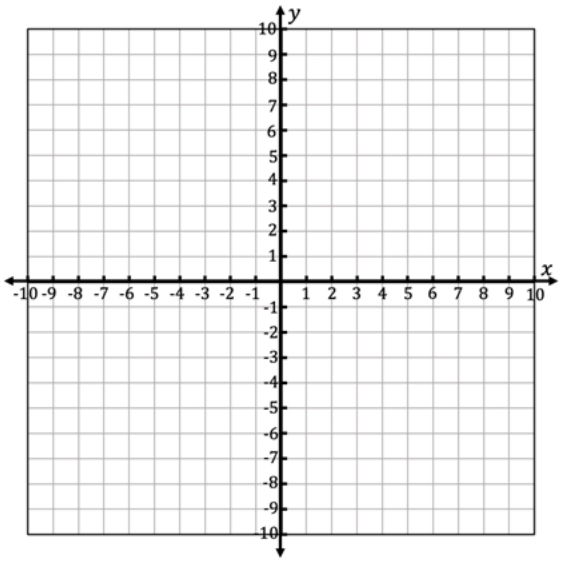
Topic 3: Factoring → Factor each polynomial completely.

9. $2x^2 + 28x + 48$

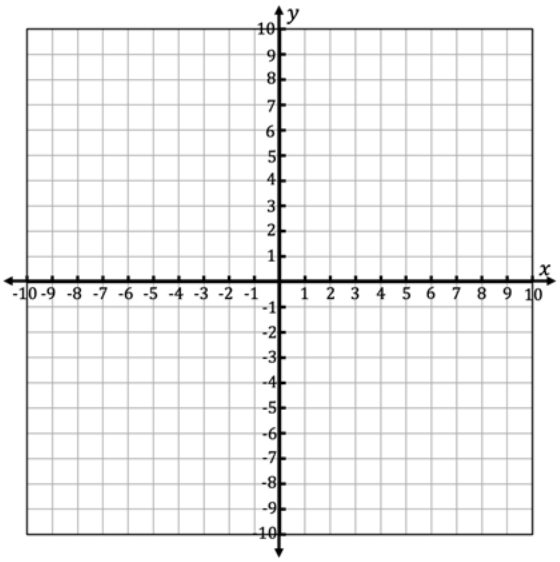
10. $5x^2 + 42x - 27$

Topic 4: Graphing → Graph each line.

11. $y = \frac{3}{4}x - 6$



12. $y = -5x + 3$



Topic 5: Parallel & Perpendicular Lines → Determine if the lines are parallel, perpendicular, or neither.

13. $y = \frac{1}{3}x + 8$
$-3x + y = -12$

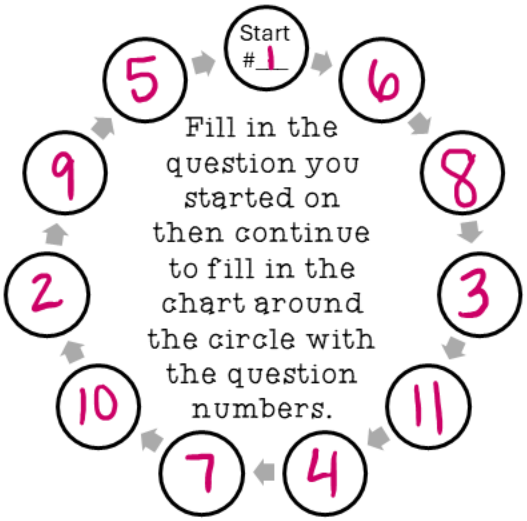
14. $y = -\frac{2}{5}x + 7$
$2x + 5y = -45$

15. $y = 4x - 1$
$\frac{1}{4}x + y = -13$

Name: Key Date:

ALGEBRA SKILLS REVIEW PRACTICE

Directions: Start at one of the stations around the room, write the question number on the first box. Complete the problem then look for the answer at the top of another paper. Make sure to show your work. If you don't see your answer, go back and try it again. Continue until all 11 questions have been answered.



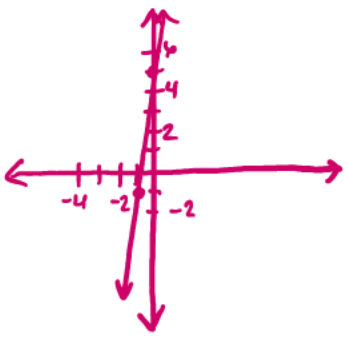
1. $5x-8=22$

$+8 \quad +8$

$\frac{5x}{5}=\frac{30}{5}$

$\boxed{x=6}$

2. Graph $y=-6x+5$



3. $\sqrt{80}$

$8 \cdot 10$

$2 \cdot 4 \quad 2 \cdot 5$

$2 \cdot 2$

$2 \cdot 2\sqrt{5}$

$=\boxed{4\sqrt{5}}$

OR

$\sqrt{80}$

$\sqrt{16} \cdot \sqrt{5}$

$=\boxed{4\sqrt{5}}$

4. $x^2-2x-35$

$\boxed{(x-7)(x+5)}$

-35, -7, 5, $+$, -2

5. $-2x+y=9$

$+2x \quad +2x$

$y=2x+9$

$y=-\frac{1}{2}x-7$

$\boxed{\text{perpendicular}}$

6. $3(2x-4)-5=7x+11$

$6x-12-5=7x+11$

$6x-17=7x+11$

$-6x \quad -6x$

$-17=x+11$

$-11 \quad -11$

$\boxed{-28=x}$

7. $4x^2+33x-27$

$4x^2+36x \quad -3x-27$

$4x \quad -3$

$4x(x+9)-3(x+9)$

$\boxed{(4x-3)(x+9)}$

-108, 36, -3, $+33$

8. $\sqrt{18}$

$\sqrt{3}\cdot\sqrt{6}$

$\sqrt{3}\cdot\sqrt{2}$

$=\boxed{3\sqrt{2}}$

OR

$\sqrt{18}$

$\sqrt{9}\cdot\sqrt{2}$

$=\boxed{3\sqrt{2}}$

9. $y=3x-8$

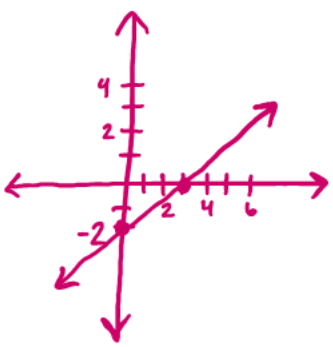
$y=3x-1$

$m=3$

$m=3$

$\boxed{\text{parallel}}$

10. Graph $y=\frac{2}{3}x-2$



11. $\frac{18x^2}{6x}+\frac{6x}{6x}$

$\boxed{6x(3x+1)}$

Name: Key Date:

ALGEBRA SKILLS REVIEW ADDITIONAL PRACTICE WORKSHEET

Topic 1: Solving Equations → Solve for the value of x.

1. $-8x - 9 + 2x + 3 = 90$

$-6x - 6 = 90$
$+6 \quad +6$
$\frac{-6x}{-6} = \frac{96}{-6}$
$x = -16$

2. $21 + 26x + 4 + 5x = 180$

$25 + 31x = 180$
$-25 \quad -25$
$\frac{31x}{31} = \frac{155}{31}$
$x = 5$

3. $7x - 12 = 4x + 18$

$-4x \quad -4x$
$3x - 12 = 18$
$+12 \quad +12$
$\frac{3x}{3} = \frac{30}{3}$
$x = 10$

Topic 2: Simplifying Radicals → Simplify each radical with no decimals.

4. $\sqrt{98}$

$\sqrt{49 \cdot 2}$
$\sqrt{7 \cdot 7}$
$7\sqrt{2}$

OR

$\sqrt{98}$
$\sqrt{49} \cdot \sqrt{2}$
$7\sqrt{2}$

5. $\sqrt{320}$

$\sqrt{10 \cdot 32}$
$\sqrt{2 \cdot 5 \cdot 2 \cdot 16}$
$\sqrt{4 \cdot 4}$
$\sqrt{2 \cdot 2} \quad \sqrt{2 \cdot 2}$
$2 \cdot 2 \cdot 2\sqrt{5}$
$8\sqrt{5}$

OR

$\sqrt{320}$
$\sqrt{64} \quad \sqrt{5}$
$8\sqrt{5}$

6. $\sqrt{243}$

$\sqrt{9 \cdot 27}$
$\sqrt{3 \cdot 3} \quad \sqrt{3 \cdot 9}$
$\sqrt{3 \cdot 3}$
$3 \cdot 3\sqrt{3}$
$9\sqrt{3}$

OR

$\sqrt{243}$
$\sqrt{81} \quad \sqrt{3}$
$9\sqrt{3}$

Topic 3: Factoring → Factor each polynomial completely.

7. $\frac{4x^2}{4x} - \frac{36x}{4x}$ gcf: 4x

$4x(x - 9)$

8. $x^2 + 5x - 24$

-24, $8 \cdot -3$, $+5$

$(x + 8)(x - 3)$

Topic 3: Factoring → Factor each polynomial completely.

9. $\frac{2x^2}{2} + \frac{28x}{2} + \frac{96}{2}$

gcf: 2

$2(x^2+14x+48)$

$2(x+8)(x+6)$

48 · 8 6 + 14

10. $5x^2 + 42x - 27$

$\frac{5x^2+45x}{5x}\ \frac{-3x-27}{-3}$

$5x(x+9) - 3(x+9)$

$(5x-3)(x+9)$

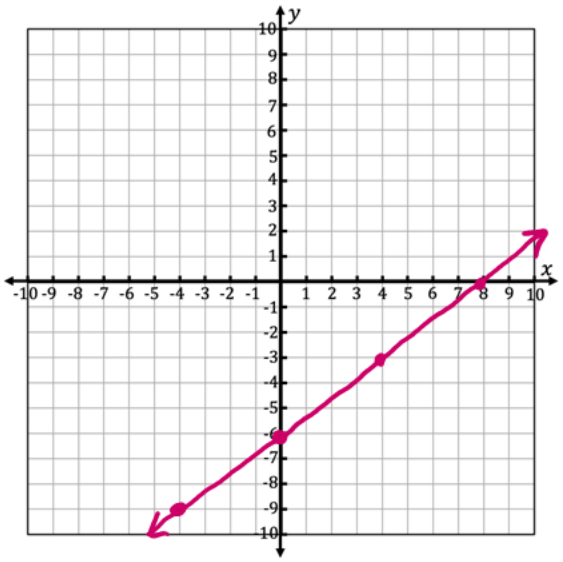
-135 · 45 -3 + 42

Topic 4: Graphing → Graph each line.

11. $y = \frac{3}{4}x - 6$

$m = \frac{3}{4}$ ↑ →

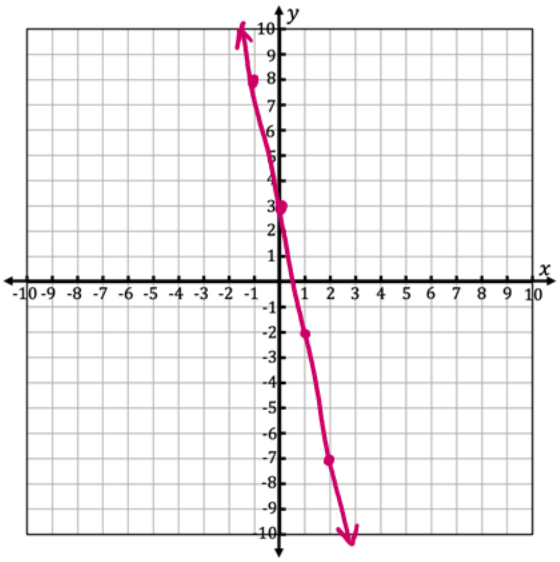
$b = -6$



12. $y = -5x + 3$

$m = \frac{-5}{1}$ ↓ →

$b = 3$



Topic 5: Parallel & Perpendicular Lines → Determine if the lines are parallel, perpendicular, or neither.

13. $y = \frac{1}{3}x + 8$

$-3x + y = -12$

$+3x \quad +3x$

$y = 3x - 12$

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

$m = 3$

Neither

14. $y = -\frac{2}{5}x + 7$

$2x + 5y = -45$

$-2x \quad -2x$

$\frac{5y}{5} = \frac{-2x}{5} - \frac{45}{5}$

$y = -\frac{2}{5}x - 9$

$m = -\frac{2}{5}$

parallel

$m = -\frac{2}{5}$

15. $y = 4x - 1$

$\frac{1}{4}x + y = -13$

$-\frac{1}{4}x \quad -\frac{1}{4}x$

$y = -\frac{1}{4}x - 13$

$m = 4$

$m = -\frac{1}{4}$

perpendicular

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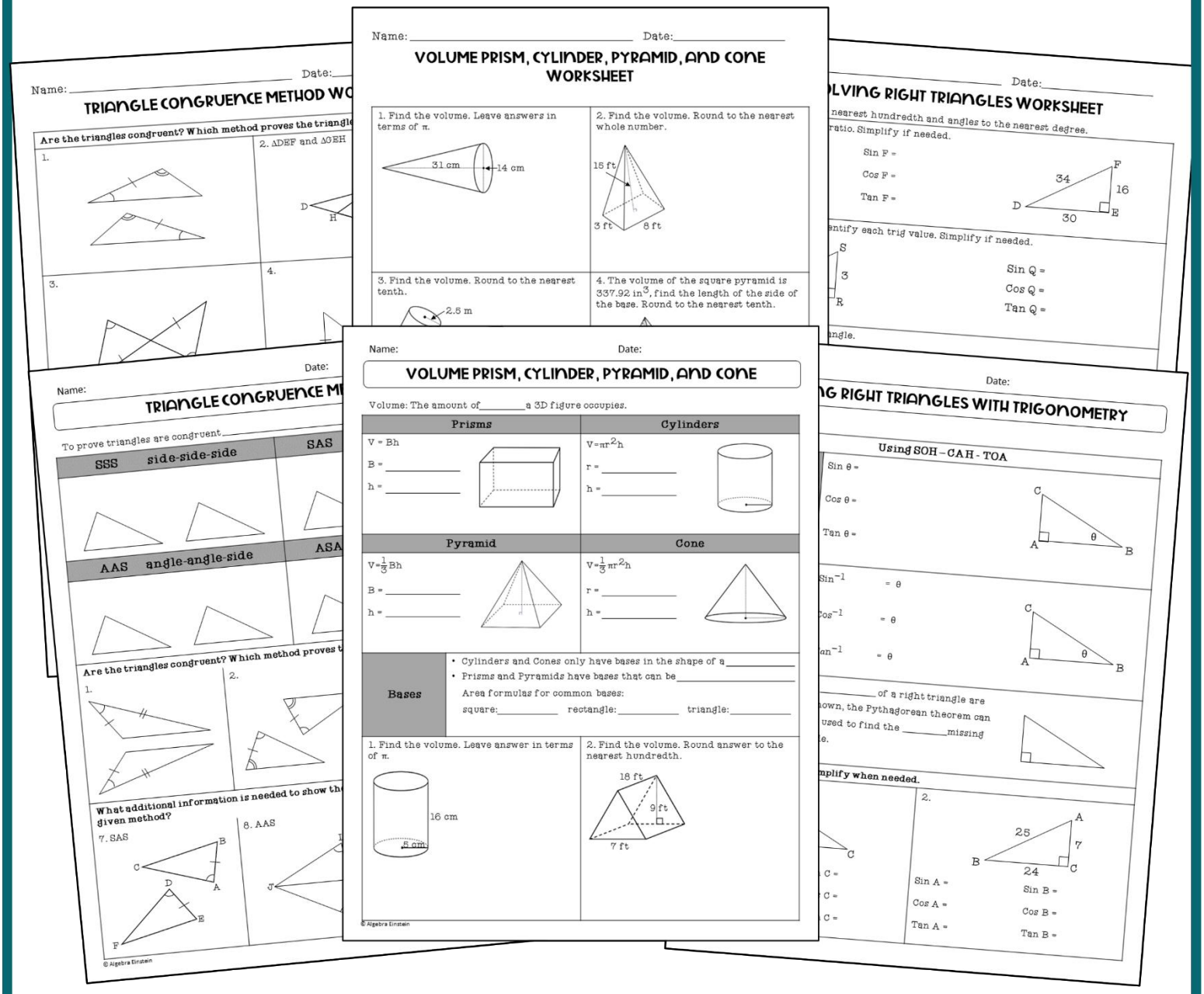

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