2.1H Properties, Identities, & Justify Name: _____ Per: _____

SHOW YOUR WORK IN PENCIL ONLY. NO WORK, NO CREDIT.

List the properties and identities from above to justify each step of finding your solutions to the following. Use as many steps as necessary.

EXAMPLE Solve for y:

$8x + 2y = -16$	GIVEN (What you KNOW)
$-8x = -8x$	Reflexive Property
$2y = -8x - 16$	Additive Property of Eq.
$\div 2 = \div 2$	Reflexive Property
$y = -4x - 8$	Multiplicative Property of Equality

1. Solve for y: $2(x + y) = 41$ GIVEN

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2. $3x + 9 = 44 - 2x$ GIVEN

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3. $5x - 7 = 7x - 17$ GIVEN

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4. $8x - (3x + 2) < 1$ _____

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5. Solve for r: $4(x - 5) = 4 + 2r$ _____

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Solve the following for x on the left while listing properties used on the right.

6. $8x - 3y + x + 4 = 22 - 5y$ _____

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7. $-8x - 2y = 18 + 2(3y - x)$ _____

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Solve for y:

8. $5y^2 < 10$

9. $4x - 8y \leq 10 - 2(y + 2)$

10. $2y^2 + 2 \geq 10$

11. $-x - 5y < 1 + 3(y - 9)$

12. Dustin and his best friend Jeremy found some money buried in a field. They split the money evenly, each getting more than $24.28. How much money did they find in total?

Solve for the given variable.

13. Solve for **x**: $y + 6 = -(x + 4) + 2$

15. Solve for **r**: $s(r^2 + t) = s$

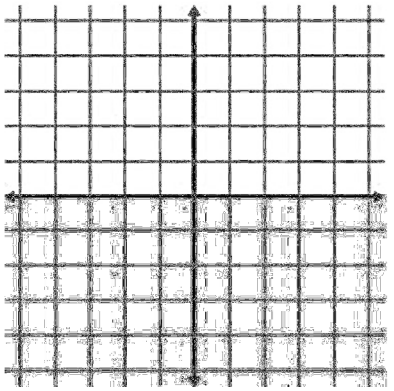
14. Solve for **y**: $\frac{2}{9}x + \frac{3}{2}y = -5 + \frac{1}{3}x$

16. Solve for **x**: $y = mx + b$

Evaluate the following expressions (plug in the numbers) if **a = 4, b = – 2,** and **c = 8.**

17. $a^2 - b^2 + c^2$ 18. $a^2 + (-b)^2 + c^2$ 19. $a^2 - (b^2 + c^2)$ 20. $a^2 - (b + c)^2$

Given the following lines, **find** the x- and y- intercepts and **then graph** and label each line.



21. Line A: $6x + 3y = 18$ y-int: _____ x-int:_____

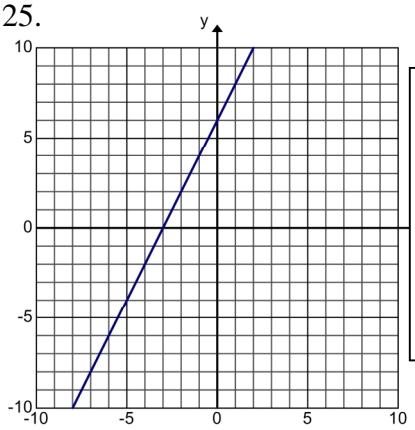
22. Line B: $y = 3x + 6$ y-int: _____ x-int:_____

23. Line C: $4x - 3y = 12$ y-int: _____ x-int:_____

24. Line D: $y = -2x + 6$ y-int: _____ x-int:_____

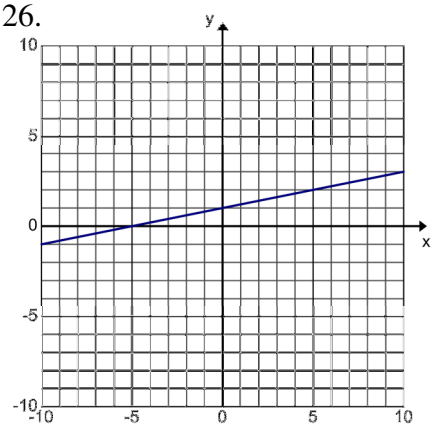
List the **y- intercepts** and **slope** then write the **equation**. **Factor** out the slope to **expose** the x-intercept.

25.



Y-Int: _____
Slope: _____
X-Int: _____
Eq: _____
Factor out slope:
_____

26.



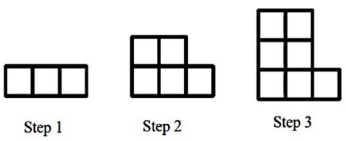
Y-Int: _____
Slope: _____
X-Int: _____
Eq: _____
Factor out slope:
_____

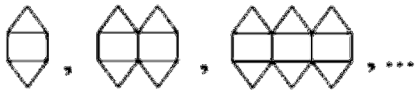
27. For the two problems above, draw a line that is **perpendicular** to each line in the given graphs.

Write the equations of line perpendicular to: #25 _____ #26 _____

Explain how you know that your lines are perpendicular. _____

28. Write one equation for each of the following **AND** show how each part relates to the image.





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