Ch.4 Factoring + Trig Test Version 3

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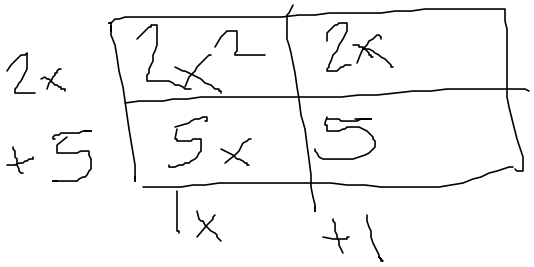
Date: 12/5/20 Pd. 1

Read all directions carefully.
Watch out for simple, careless errors.
Make sure all figures are labeled appropriately.
Please indicate all answers clearly so they are easy to locate.
Show ALL work you have done to receive full credit for your answer.

1) (5 pts.) Draw a rectangle using algebra tiles for the expression $2x^2 + 7x + 5$. Sketch your rectangle and write the area as a sum and as a product.

$(2x+5)(1x+1)$

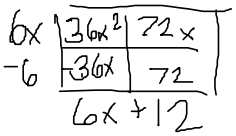
$2x^2+7x+5$



2) (3 pts.) **Multiple Choice:** The quadratic expression $6x^2 + 6x - 12$ has several possible sets of factors. Which set of factors below is not a possible answer? Explain how you know.

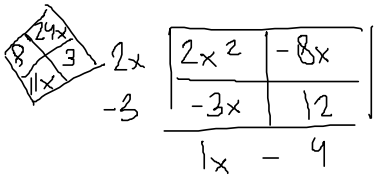
a. $6(x-1)(x+2)$ b. $(6x-6)(x+2)$

c. $(x-6)(6x+2)$ d. $(3x-3)(2x+4)$



3) (8 pts) Factor the following quadratics if possible. If a quadratic cannot be factored, explain why not.

a. $2x^2 - 11x + 12$

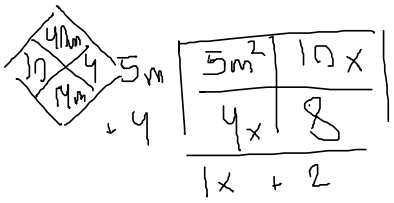


$(2x-3)(1x-4)$

b. $y^2 + 7y + 7$

This cannot be factored because there is no way to split the 7y.

c. $5m^2 - 14m + 8$



$(5m+4)(1x+2)$

d. $15p^2 - 3p$

Cannot be factored because you cant use 0.

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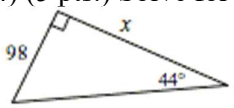
4) (5 pts.) Solve for the missing side length. Show your work. Round lengths to the nearest tenth.

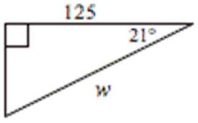


$\tan(44°) \cdot 98 = 94.63$

$\tan(44) = \frac{98}{x}$

$x = 94.6$

5) (5 pts.) Use trigonometric ratios to solve for the variable. Show your work. Round lengths to the nearest tenth.

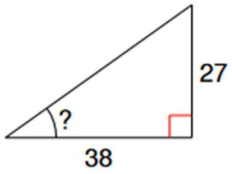


$\cos(21) = \frac{125}{w}$

$\cos(21) \cdot 125 = 116.7$

$w = 116.7$

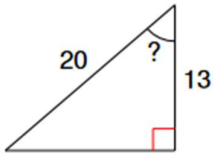
6) (3 pts.) Solve for the missing angle. Show your work.



$\tan^{-1}\left(\frac{27}{38}\right) = 35.4$

$? = 35.4°$

7) (3 pts.) Solve for the missing angle. Show your work.



$\cos^{-1}\left(\frac{13}{20}\right) = 49.5$

$? = 49.5°$

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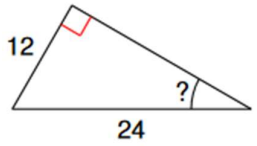
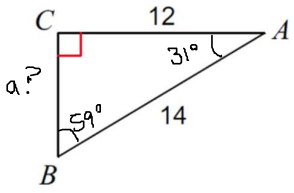
8) (3 pts.) Solve for the missing angle. Show your work.



$\sin^{-1}\left(\frac{12}{24}\right) = 30$

$P = 30°$

9.) (6 pts.) Solve the triangle for all missing side lengths and angle measures. Show your work to receive full credit.



$\cos^{-1}\left(\frac{12}{14}\right) = 31$

$\sin^{-1}\left(\frac{12}{14}\right)$

$\angle A = 31°$

$\angle B = 59$

$\angle A = 31°$

$\angle B = 59°$

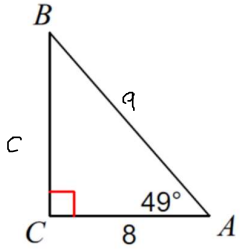
$a = 7.2$

$\tan(31) \cdot 12$

$a = 7.2$

196

10) (6 pts) Solve the triangle for all missing side lengths and angle measures. Show your work to receive full credit.



$\tan(49) \cdot 8$

$90 + 49 = 139$

$180 - 139 = 41$

$\angle B = 41°$

$a = 12.2$

$c = 9.2$

$9.2^2 + 8^2 = 12.2^2$

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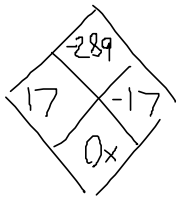
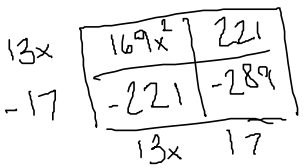
Bonus) (4 pts) Factor each of the expressions below, if possible. Show your work.

a. $169x^2 - 289$

÷13 ÷13

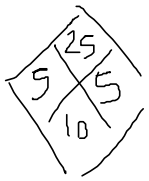
$13x^2 - 22.3$

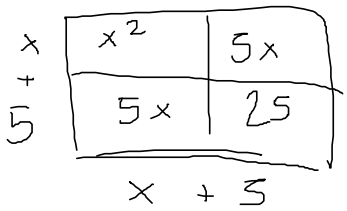




$(13x - 17)(13x + 17)$

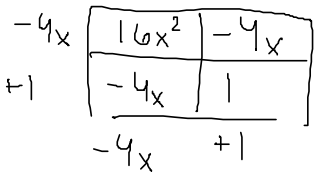
b. $x^2 + 10x + 25$





$(x + 5)^2$

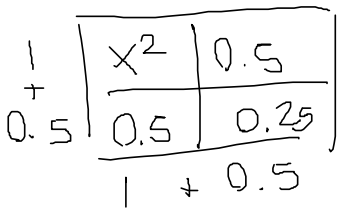
c. $16x^2 - 8x + 1$



$(-4x + 1)^2$

d. $x^2 - \frac{1}{4}$

$x^2 + 0 - 0.25$



$(1 + 0.5)^2$