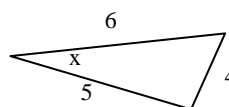
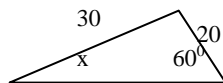


## Algebra II Chapter 13 Review

1. Solve for x in each triangle:



2. Find the area that makes up each triangle below

a)  $a = 12$   $b = 21$   $c = 10$

b)  $m\angle B = 80^\circ$   $a = 14$   $c = 21$

3. Solve for x in each:      a)  $2(4^{x-1}) = 15$       b)  $3x^2 + 4x - 8 = 0$       c)  $16^x = 64^{3x-5}$

4. Solve for each without a calculator:      a)  $\cos 90$       b)  $\tan 225$       c)  $\sin\left(-\frac{\pi}{4}\right)$       d)  $\cot\frac{3\pi}{2}$

5. Solve for each without a calculator. Your answer must be in both radians and degrees.

a)  $\sin^{-1}\left(\frac{\sqrt{2}}{2}\right)$     b)  $\tan^{-1}0$       c)  $\cos^{-1}(-1)$     d)  $\tan^{-1}(-\sqrt{3})$

6. Solve the following system:       $y = 5x + 2$        $y = 2x^2 - 2x + 5$ . What does your answer mean?

7. Simplify:  $\frac{(n-2)!}{(n+1)!}$

8. Know how to do combinations and permutations such as: How many groups of 3 can you form from 20 people? What if the order mattered?

9. If you deposit \$20000 in a bank account that pays 6.8% interest compounded quarterly, how much would you have after 10 years?

Answers:

1. a)  $\frac{\sin x}{20} = \frac{\sin 60}{30}$ ,  $x = 35.26$     b)  $4^2 = 6^2 + 5^2 - 2(6)(5)\cos x$ ,  $x = 41.4^\circ$

2. a)  $s = 21.5$ ,  $A = 34.7$     b)  $b = 23.13$ ,  $s = 29.065$ ,  $A = 144.78$

3. a)  $x = 2.45$       b)  $x = 1.097$  or  $-2.43$       c)  $x = 15/7$

4. a) 0    b) 1    c)  $-\frac{\sqrt{2}}{2}$     d) undefined

5. a)  $\frac{\pi}{4}$  or  $\frac{3\pi}{4}$      $45^\circ$  or  $135^\circ$     b) 0 or  $\pi$ , 0 or  $180^\circ$     c)  $\pi$  or 180    d)  $\frac{5\pi}{3}$  or  $\frac{2\pi}{3}$

6.  $(\frac{1}{2}, 9/2)$  and  $(3, 17)$

7.  $1/(n+1)(n)(n-1)$

8. a)  ${}_{20}C_3$     b)  ${}_{20}P_3$

9. \$39,252.57