NAME_____DATE_____PER._____

11.4 – EFFECTS OF CHANGING DIMENSIONS ON AREA AND VOLUME

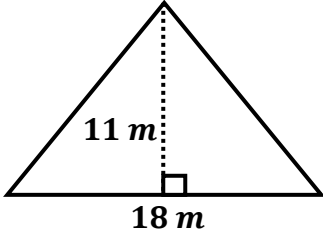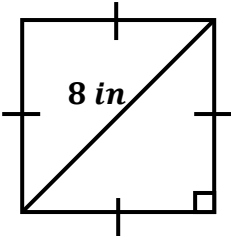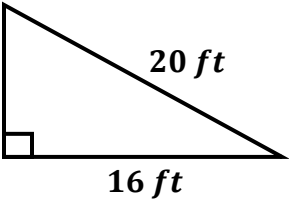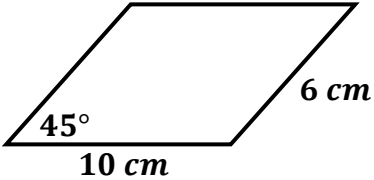**Find a) the area of each figure and b) the area of the figure after it has undergone the indicated changes.**

1. a)_____ b)_____	 8 mm	**Changes** Width: *Twice* **as long** Length: *One − fourth* **as long**
2. a)_____ b)_____	 7 ft 5 ft	**Changes** Width: *Twice* **as long** Length: *Three times* **as long**
3. a)_____ b)_____	 11 m 18 m	**Changes** Height: *Twice* **as long** Base: *One − third* **as long**
4. a)_____ b)_____	 8 in	**Changes** Width: *Twice* **as long** Length: *One − fourth* **as long**
5. a)_____ b)_____	 20 ft 16 ft	**Changes** Height: *One − third* **as long** Base: *Two times* **as long**
6. a)_____ b)_____	 6 cm 45° 10 cm	**Changes** Height: *Twice* **as long** Base: *One and a half times* **as long**

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Find the volume of each prism after undergoing the indicated changes.

|	
7. V = _____	A rectangular prism has a volume of $344\ cubic\ units$. Find its volume if two dimensions were $doubled$, and a third dimension was $tripled$.
8. V = _____	If the volume of a rectangular prism is $420\ cubic\ units$, what is its volume if one dimension is $halved$, a second dimension is reduced to $one-third$ it original length, and a third dimension remains unchanged?
9. V = _____	The volume of a right triangular prism is $300\ cubic\ units$. Find its volume if one dimension is $doubled$, a second dimension is $tripled$, and a third dimension is $quadrupled$.
10. V = _____	A triangular prism has a volume of $375\ cubic\ units$. Find its volume if all of its dimensions were reduced to $one-fifth$ their original length?
11. V = _____	A right triangular prism has a volume of $48\ cubic\ units$. Find its new volume if two of its dimensions were $doubled$, and a third dimension was reduced to $one-fourth$ its original length.
12. V = _____	If the volume of a prism is $108\ cubic\ units$, what will be its volume if all three of its dimensions were reduced to $one-third$ their original length?
13. V = _____	The volume of a rectangular prism is $298\ cubic\ units$. If the dimensions are $tripled$, what is the volume of the figure in $cubic\ units$?

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14. _____

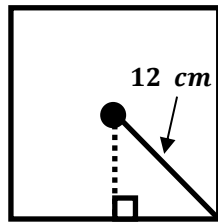If the length and width of the figure below are *doubled*, how will it affect the volume of the figure?

7 *in*

6 *in*

9 *in*
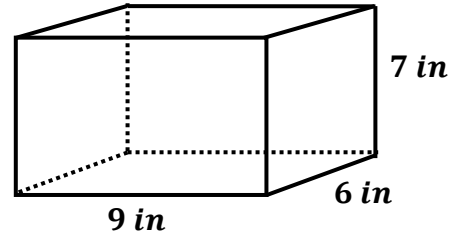
REVIEW
Find the area of each of the following regular polygons.

15. A = _____

14 *in*

16. A = _____

12 *cm*

17. A = _____

7√3 *m*

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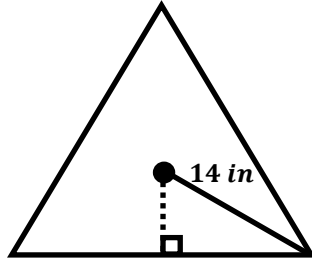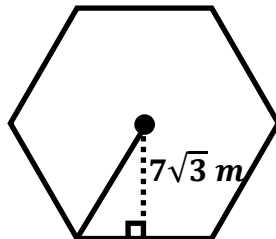
Find the correct answer for each of the following. _Work must be shown in order to receive credit_!

18. _____	Find the roots of $4x^2 - 16 = 0$. A. $x = 2, x = -2$ B. $x = 2, x = -8$ C. $x = 4, x = -4$ D. $x = 8, x = -2$
19. _____	A Post Oak tree outside of Matt's house casts a $12 - foot$ shadow at a certain time of day. At the same time Matt, who is $6\ feet$ tall, casts a $2 - foot$ shadow. How tall is the tree? A. $15\ ft$ B. $18\ ft$ C. $24\ ft$ D. $36\ ft$
20. _____	The marketing department of a company is considering making a key chain with a miniature replica of their top-selling dishwasher detergent. The dimensions of the dishwasher detergent box are $9\ inches\ by\ 7.5\ inches\ by\ 2.25\ inches$. If the replica will be $\frac{1}{5}$ the size of the regular box, what will be the volume of the miniature replica? A. $1.215\ cu.in.$ B. $8.37\ cu.in.$ C. $30.375\ cu.in.$ D. $41.85\ cu.in.$

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