

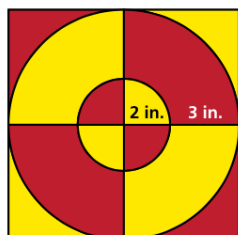
**Chapter 12 Probability:**

Page 668: Example 1-5. Page 677: Example 3, 4.

Page 672: 3, 9, 13; Page 680: 3, 4, 12, 13.

- Five coins are flipped at the same time.
  - What is the total number of outcomes?
  - What is the probability of getting any single combination?
  - If those same coins are flipped, what is the probability that they will show up as either all heads or all tails?
- A bag contains 5 red, 3 white, and 2 blue marbles. If the marbles ARE replaced after each pick, find the following probabilities:
  - $P(\text{red, red, blue})$
  - $P(\text{red, red, red})$
  - $P(\text{red, white, blue})$
  - $P(\text{white, white, blue})$
  - $P(\text{blue, blue, blue})$
- A bag contains 5 red, 3 white, and 2 blue marbles. If the marbles ARE NOT replaced after each pick, find the following probabilities:
  - $P(\text{red, red, blue})$
  - $P(\text{red, red, red})$
  - $P(\text{blue, blue, blue})$
  - $P(\text{red, white, blue})$
  - $P(\text{white, white, blue})$

- You throw a dart at the board below. Your dart is equally likely to hit any point inside the square board.
  - What is the area of the square?
  - What is the area of the 2 in circle?
  - What is the area of the 5 in circle?
  - What is the probability that your dart does not land in one of the two circles?

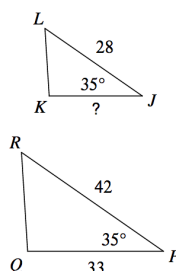


**Chapter 8 Similarity:**

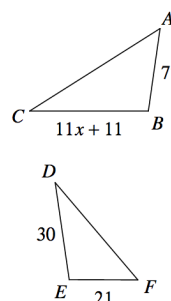
Page 418: Example 1, 2, 3. Page 430: Example 3.

Page 446: Example 1, 2; Page 423: 3-8, Page 431: 22, Page 450: 3-8, 17-18.

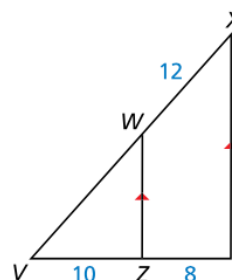
- If the two triangles below are similar, find the missing side and their scale factor, given  $\triangle K LJ \sim \triangle Q RP$



- If the two triangles below are similar, solve for  $x$  and their scale factor, given  $\triangle ABC \sim \triangle FED$



- A tree is standing next to a 100 ft. high building. The tree casts a 30 ft. shadow and the building casts a 50 ft. shadow. How tall is the tree?
- A school flagpole casts a shadow that is 45 feet long. At the same time, a boy who is five feet eight inches' tall casts a shadow that is 51 inches long. How tall is the flagpole to the nearest foot?
- In the diagram,  $\overline{WZ} \parallel \overline{XY}$ ,  $WX = 12$ ,  $VZ = 10$ , and  $ZY = 8$ . What is the length of  $\overline{VW}$ ?



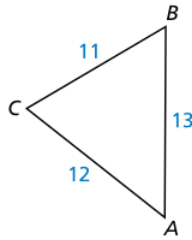
## Lesson 6.5 Inequalities in one triangle &

### Lesson 9.1 Pythagorean theorem:

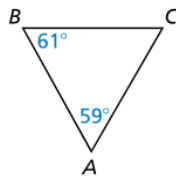
Page 337: Example 3-5. Page 465: Example 2-5.

Page 340: 11-24; Page 468: 1-14, 21-26.

10. List the angles of  $\triangle ABC$  in order from smallest to largest.



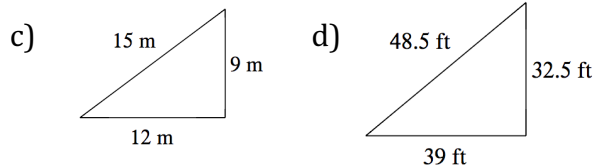
11. List the sides of  $\triangle ABC$  in order from shortest to longest.



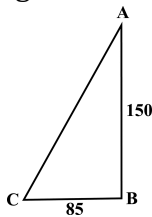
12. Given the polygons, identify as not a triangle, acute triangle, obtuse triangle or right triangle.

a) Side lengths of: 15, 10, and 8.

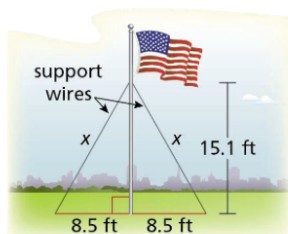
b) Side lengths of: 14, 10 and 24.



13. A fence with dimensions as shown is being constructed in the shape of a right triangle, how long must the other side be?



14. The flagpole shown is supported by two wires. Use the Pythagorean Theorem to approximate the length of each wire.



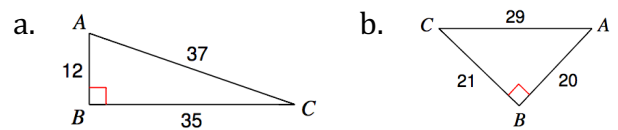
## Chapter 9 Right triangles & Trigonometry:

Page 488: Examples 1-2, 4. Page 494: Examples 1,

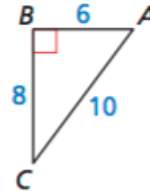
6. Page 502: Examples 1, 2, 3. Page 491: 3-12, 25;

Page 498: 3-8, 17-22; Page 505: 3-6, 13-18, 27.

15. In the triangle below, find Sin C, Cos C and tan C as a ratio.

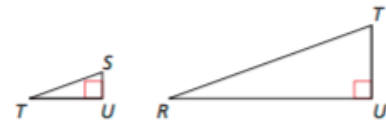


16. Use the triangle to answer the questions,

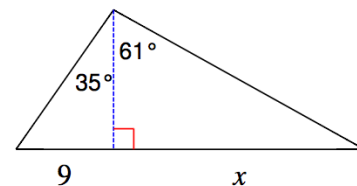


- a. Which trigonometric ratios are equivalent to  $3/5$ ?  
b. Which trigonometric ratios are equivalent to  $4/5$ ?  
c. Which trigonometric ratios are equivalent to  $4/3$ ?

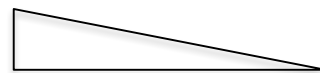
17. The triangles below are similar. Triangle RTU has side lengths  $RT=39$ ,  $RU=36$  and  $TU=15$  respectively. Select the angles whose cosine equals  $12/13$ .



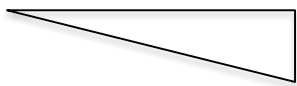
18. In the triangle below, solve for x.



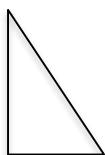
19. If an acute angle of a right triangle has a Sine ratio of  $40/41$  and a Cosine ratio of  $9/41$ , what would be its Tangent Ratio?



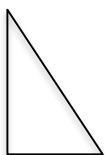
20. If an acute angle of a right triangle has a Sine ratio of  $\frac{9}{41}$  and a Cosine ratio of  $\frac{40}{41}$ , what would be its Tangent Ratio?



21. A tree stands 100ft. tall. It casts a shadow of 50ft. upon the ground. What is the angle of elevation from the tip of the shadow to the top of the tree?

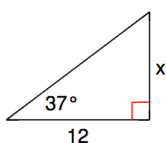


22. You are measuring the height of a tree. Your angle measuring device is 3.5 feet tall. You stand 40 feet from the base of the tree. The angle of elevation to the top of the tree is  $65^\circ$ . Find the height of the tree to the nearest foot.

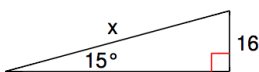


23. In the following problems, find the missing side length.

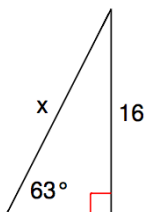
a.



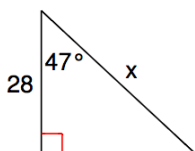
b.



c.



d.

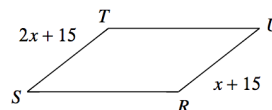


### Chapter 7 Quadrilaterals:

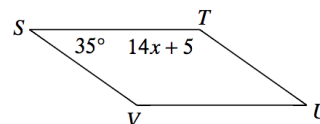
Page 367: Example 1,2. Page 389: Example 1,2.

Page 372: 3-6; Page 394: 29-34, 65-70; Page 404: 31-34

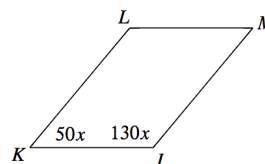
24. The image below is a parallelogram, solve for  $x$ , TS and RU.



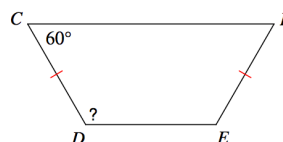
25. The image below is a parallelogram, solve for  $x$  and find the measure of all angles.



26. The image below is a parallelogram, solve for  $x$  and find the measure of all angles.



27. The image below is an isosceles trapezoid, find the measure of the indicated angle and all other angles.



28. Write if the statements below are sometimes, always or never true.

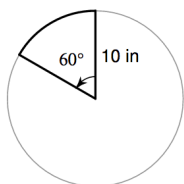
- All **rectangles** are **squares**.
- All **quadrilaterals** are **parallelograms**.
- All **parallelograms** are **rectangles**.
- All **parallelograms** are **quadrilaterals**.
- The diagonals of an isosceles **trapezoid** bisect each other.
- The diagonals of a **rhombus** are perpendicular.
- The diagonals of a **kite** are congruent.
- The diagonals of a **rectangle** are congruent.
- The diagonals of a **parallelogram** are perpendicular.

## Chapter 10 & 11 Circles:

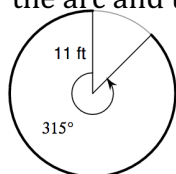
Page 538: Example 1, 2, 3. Page 594: Example 1, 2, 5. Page 602: Example 1, 3.  
Page 542: 3-14; Page 598: 3-10; Page 606: 3-10, 15-18.

29. Find the circumference of a circle in terms of  $\pi$  and to the nearest tenth with a diameter of 36cm.
30. Find the area of a circle in terms of  $\pi$  and to the nearest tenth with a diameter of 36cm.
31. Find the area of a circle in terms of  $\pi$ , with a circumference of  $36\pi$ .

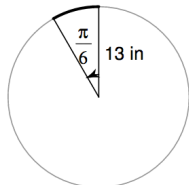
32. In the following image, find the length of the arc and the area of the sector.



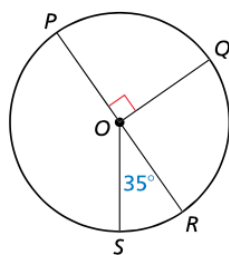
33. In the following image, find the length of the arc and the area of the sector.



34. In the following image, find the length of the arc and the area of the sector.



35. Find the measure of each arc.



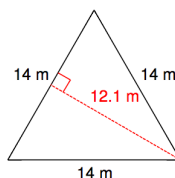
- a.  $\widehat{SQ}$   
b.  $\widehat{RPQ}$   
c.  $\widehat{PRS}$

## Chapter 11 Area and Volume:

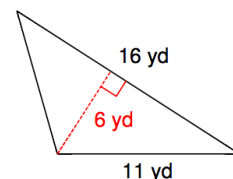
Page 610: Example 1. Page 626: Example 1, 2. Page 636: Example 1. Page 642: Example 1, 2.  
Page 616: 3-6; Page 631: 3-10; Page 639: 5, 6;  
Page 645: 3-10

36. Find the areas of the following triangles

a.

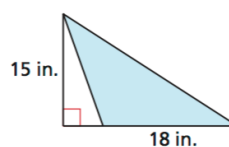


b.

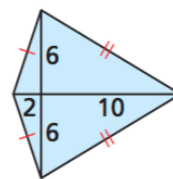


37. Calculate the area of the shaded regions below.

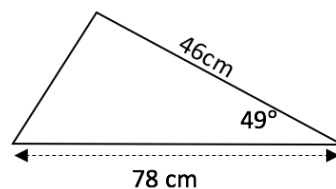
a.



b.

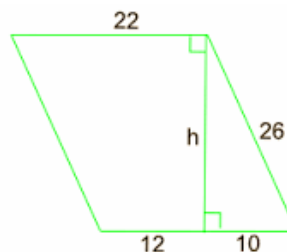


38. Use the figure below,



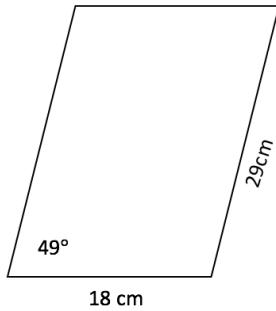
- a. Calculate the height of the triangle.  
b. Calculate the area of the triangle.

39. Use the figure below,



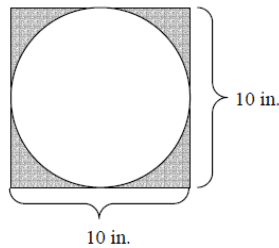
- a. Calculate the height of the parallelogram  
b. Calculate the area of the parallelogram.

40. Use the figure below,



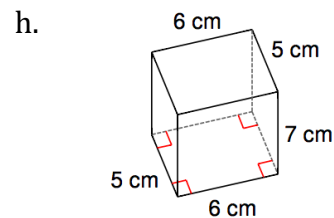
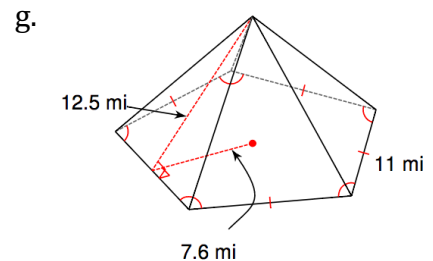
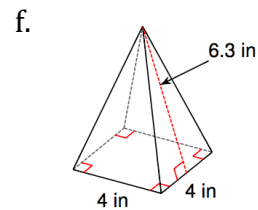
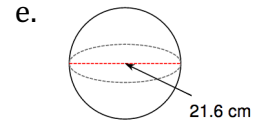
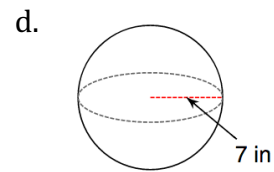
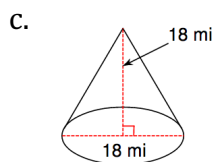
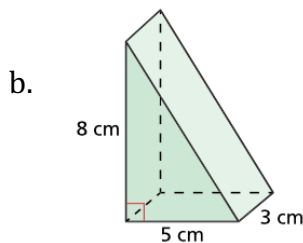
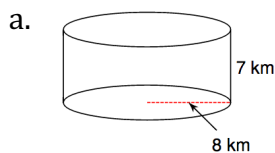
- Calculate the height of the parallelogram.
- Calculate the area of the parallelogram.

41. In the following problems, find the area of the shaded region.



- Find the area of the square.
- Find the area of the circle
- Find the area of the shaded region.
- What is the probability that a dart lands on the shaded region?

42. In the following problems, find the surface area and volume of the solid.



Tips to study for final:

- Show all your work on a separate paper.
- No Notes allowed.
- Equation sheet will be provided.
- Make a study group and practice the problems suggested. Check your answers with the back of the book.
- Your electronic devices will not be allowed.
- Get a good night sleep the night before and eat a healthy breakfast.
- If caught cheating the district policy will apply – receive a zero score and parent contact will be made.

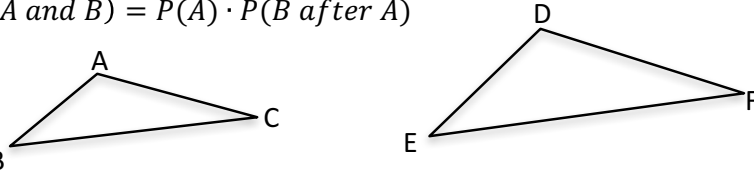
## Geometry Final Exam Equation Sheet

### Probability:

- Theoretical Probability:  $P(A) = \frac{\text{Number of favorable outcomes}}{\text{Total number of outcomes}}$
- Experimental Probability:  $P(A) = \frac{\text{Number of successes}}{\text{Number of trials}}$
- Independent Events:  $P(A \text{ and } B) = P(A) \cdot P(B)$
- Dependent Events:  $P(A \text{ and } B) = P(A) \cdot P(B \text{ after } A)$

### Similar Polygons:

- If  $\triangle ABC \sim \triangle DEF$ ,
  - Corresponding Angles are congruent  $\angle A \cong \angle D$ ,  $\angle B \cong \angle E$ ,  $\angle C \cong \angle F$
  - Corresponding side lengths are proportional  $\frac{DE}{AB} = \frac{EF}{BC} = \frac{FD}{CA} = k$ , where k is the scale factor.

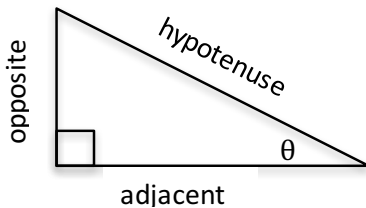


**Triangle Inequality:** For any triangle  $\triangle ABC$ ,  $AB + BC > AC$ ,  $AC + BC > AB$ , and  $AB + AC > BC$

### Pythagorean Theorem:

- For any right triangle,  $a^2 + b^2 = c^2$ , where c is the hypotenuse of the triangle
- If  $a^2 + b^2 = c^2$ , then  $\triangle ABC$  triangle is a right triangle.
- If  $a^2 + b^2 > c^2$ , then  $\triangle ABC$  is acute.
- If  $a^2 + b^2 < c^2$ , then  $\triangle ABC$  is obtuse.

**Trigonometric Ratios (SohCahToa):** for right triangles



Circles:  $d = 2r$      $r = \frac{d}{2}$

$\sin \theta = \frac{\text{opposite}}{\text{hypotenuse}}$	$\theta = \sin^{-1}\left(\frac{\text{opposite}}{\text{hypotenuse}}\right)$
$\cos \theta = \frac{\text{adjacent}}{\text{hypotenuse}}$	$\theta = \cos^{-1}\left(\frac{\text{adjacent}}{\text{hypotenuse}}\right)$
$\tan \theta = \frac{\text{opposite}}{\text{adjacent}}$	$\theta = \tan^{-1}\left(\frac{\text{opposite}}{\text{adjacent}}\right)$

### Area Formulas:

Circle	Parallelogram/ Rectangle	Trapezoid	Rhombus/Kite	Triangle	Regular Polygon (i.e. Hexagon)
$A = \pi r^2$	$A = bh$	$A = \frac{1}{2}h(b_1 + b_2)$	$A = \frac{1}{2}d_1d_2$	$A = \frac{1}{2}bh$	$A = \frac{1}{2}aP$

### Surface Area and Volume:

Prism	Cylinder	Pyramid	Cone	Sphere
$SA = PH + 2B$ $V = BH$	$SA = 2\pi rH + 2\pi r^2$ $V = \pi r^2 H$	$SA = \frac{Pl}{2} + B$ $V = \frac{BH}{3}$	$SA = \pi rl + \pi r^2$ $V = \frac{\pi r^2 H}{3}$	$SA = 4\pi r^2$ $V = \frac{4}{3}\pi r^3$

P= Perimeter of base    B=area of base    H=height of solid