Geometry
Chapters 1-6 Exam Review

Name: Key

Chapter 1

1. Solve the equations below for x, if possible. Be sure to check your solution(s).

a. $\frac{3x-1}{4} = -\frac{5}{11}$

$11(3x-1) = 4(-5)$

$33x - 11 = -20$

$33x = -9$

$x = -\frac{3}{11}$

b. $(5-3x)(4x+3) = 0$

$5-3x=0$ or $4x+3=0$

$-3x = -5$ $\quad 4x = -3$

$x = \frac{5}{3}$ or $x = -\frac{3}{4}$

c. $6 - 5(2x-3) = 4x+7$

$6-10x+15 = 4x+7$

$-10x+21 = 4x+7$

$21 = 14x+7$

$14 = 14x$

$1 = x$

d. $\left(\frac{3x}{4} + 2 = 4x - 1\right) \cdot 4$

$3x + 8 = 16x - 4$

$8 = 13x - 4$

$12 = 13x$

$\frac{12}{13} = x$

2.

a. Rotate ΔABC 90° counter-clockwise (↺) about the origin to create $\Delta A'B'C'$. Name the coordinates of C'.

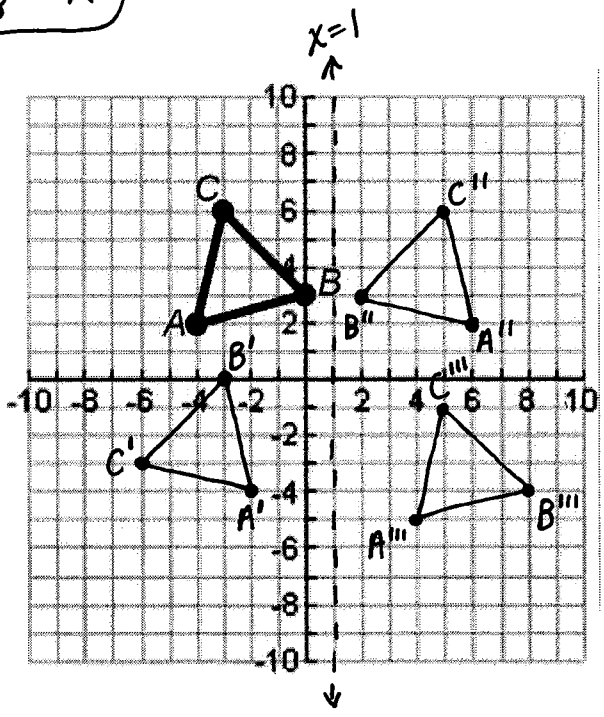
$C'(-6,-3)$

b. Reflect ΔABC across the vertical line x=1 to create $\Delta A''B''C''$. Name the coordinates of the vertices.

$A''(6,2)$ $B''(2,3)$ $C''(5,6)$

c. Translate ΔABC so that A''' is at (4, -5). Name the coordinates of B'''.

$B'''(8,-4)$



Chapter 2

3. Solve each system of equations below. Then verify that your solution makes each equation true.

a. $y = 5 - x$
$4x + 2y = 10$

$4x + 2(5-x) = 10$
$4x + 10 - 2x = 10$
$2x + 10 = 10$
$2x = 0$
$x = 0$

$y = 5 - (0)$
$y = 5$

$(0, 5)$

b. $3(3x + 2y = 12)$
$2(5x - 3y = -37)$

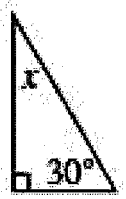
$9x + 6y = 36$
$+ \quad 10x - 6y = -74$
$19x = -38$
$x = -2$

$3(-2) + 2y = 12$
$-6 + 2y = 12$
$2y = 18$
$y = 9$

$(-2, 9)$

4. For each diagram below, solve for *x*. Give the angle pair name and the relationship to justify your equation.

a.



$x + 30 = 90$
$x = 60$

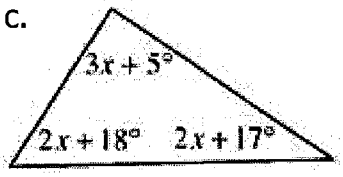
acute $\angle$'s of a right $\triangle$ are always complementary.

b.

$5x + 13 + 3x + 7 = 180$
$8x + 20 = 180$
$8x = 160$
$x = 20$

Straight $\angle$ pair is always supplementary.

c.



$3x + 5 + 2x + 18 + 2x + 17 = 180$
$7x + 40 = 180$
$7x = 140$
$x = 20$

$\triangle$ $\angle$ sum is always 180.

5. Berti is the Shape Factory's top employee. She has received awards every month for having the top sales figures so far for the year. If she stays on top, she will receive a $5000 bonus for excellence. She currently has sold 16,250 shapes and continues to sell 340 per month. Since there are eight months left in the sales year, Sarita is working hard to catch up. While she has only sold 8,830 shapes, she is working overtime and on weekends so that she can sell 1,082 per month. Will Sarita catch up with Berti before the end of the sales year? If so, when?

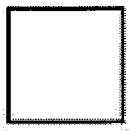
Berti: $y = 16250 + 340x$
Sarita: $y = 8830 + 1082x$

$16250 + 340x = 8830 + 1082x$
$16250 = 8830 + 742x$
$7420 = 742x$
$10 = x$

It will take Sarita 10 months to catch up with Berti. Since there is only 8 months left, she will not catch up by the end of the year.

6. Find the area of each figure below. Show all work. Remember to include units in your answer.

a. a square

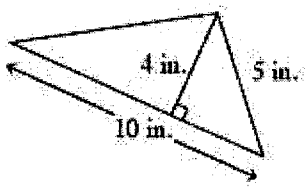


$A = bh$

$A = 7(7)$

$A = 49\ cm^2$

b.

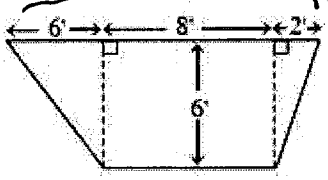


$A = \frac{1}{2}bh$

$A = \frac{1}{2}(10)(4)$

$A = 20\ in^2$

c.



16

8

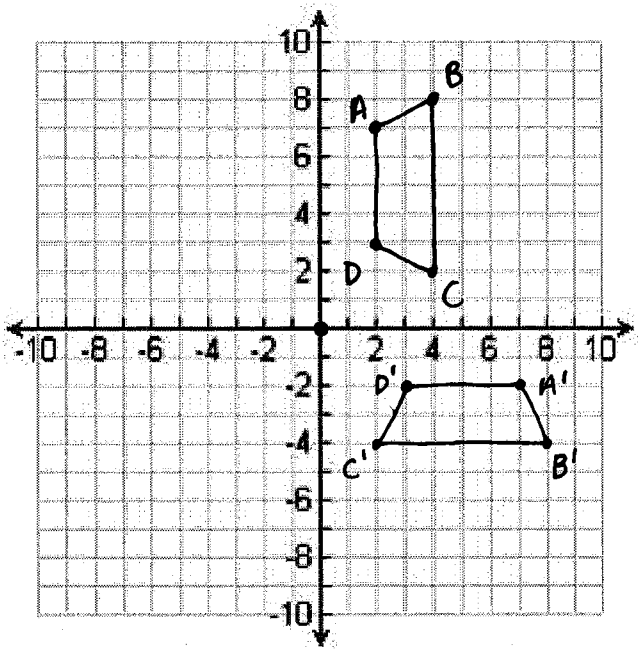
$A = \frac{1}{2}h(b_1 + b_2)$

$A = \frac{1}{2}(6)(16+8)$

$A = 3(24)$

$A = 72\ ft^2$

7. Plot quadrilateral *ABCD*. *A* (2, 7), *B* (4, 8), *C* (4, 2), and *D* (2, 3).



a. What is the best name for this shape? Justify your conclusion. Isosceles trapezoid

$\overline{AD} \parallel \overline{BC}$ and $\overline{AB} \cong \overline{DC}$

b. Quadrilateral $A'B'C'D'$ is formed by rotating *ABCD* 90° clockwise about the origin. Name the Coordinates of the vertices.

$A'(7,-2)$ $B'(8,-4)$ $C'(2,-4)$ $D'(3,-2)$

c. Find the area of *ABCD*. Show all work.

$A = \frac{1}{2}h(b_1 + b_2)$

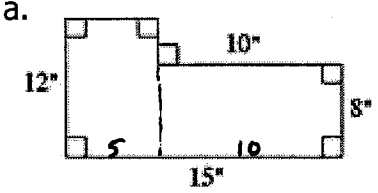
$A = \frac{1}{2}(2)(4+6)$

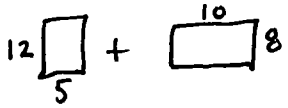
$A = 1(10)$

$A = 10\ u^2$

8. Find the area of each figure. Assume b is a parallelogram.

a.



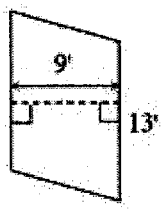


$A = 12(5) + 10(8)$

$A = 60 + 80$

$A = 140\ in^2$

b.



$A = bh$

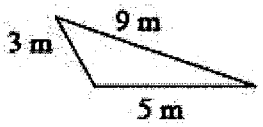
$A = 13(9)$

$A = 117\ ft^2$

Chapter 3

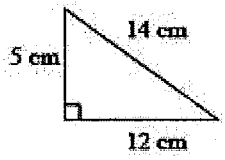
9. Examine each diagram below. Identify the error in each diagram.

a.



3+5 is not greater than 9, so these lengths don't make a triangle

b.

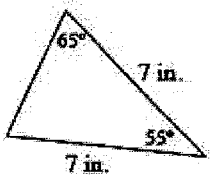


$5^2+12^2 \neq 14^2$

$169 \neq 196$

can't be a right △.

c.



missing $< = 60°$

Can't be an isosceles △.

10. Rewrite the statements below into conditional ("If ..., then ...") form.

a. Lines with the same slope are parallel.

If lines have the same slope, then they are parallel.

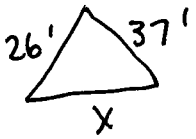
b. A vertical line has undefined slope.

If a line is a vertical line, then it has undefined slope.

c. The lines with slopes $\frac{2}{3}$ and $-\frac{3}{2}$ are perpendicular.

If lines have slopes $\frac{2}{3}$ and $-\frac{3}{2}$, then they are perpendicular.

11. Misty is building a triangular planting bed. Two sides have lengths of 26 feet and 37 feet. What are the possible lengths for the third side? Hint: Give your answer as a range of values

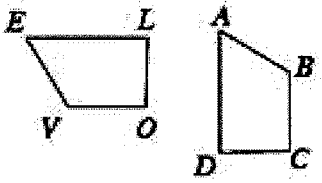


$37-26 < x < 37+26$

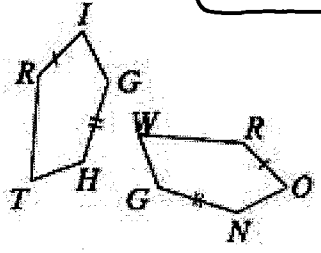
$11' < x < 63'$

12. Assume that each pair of figures below is similar. Write a similarity statement to illustrate which parts of each shape correspond. Remember: letter order is important!

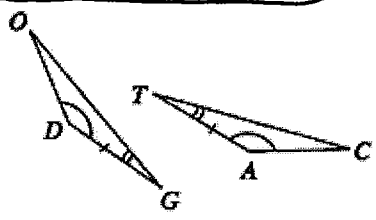
a. *ABCD* ~ ? EVOL



b. *RIGHT* ~ ? RONGW

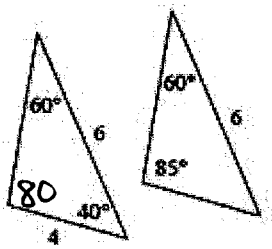


c. △DGO ~ △ATC?



13. Determine which of the following pairs of triangles are similar. Explain your work.

a.



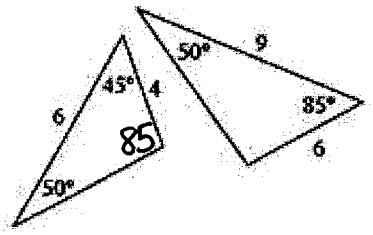
$60+40+x=180$

$100+x=180$

$x=80$

not ~.
Corr. ∠'s not ≅.

b.



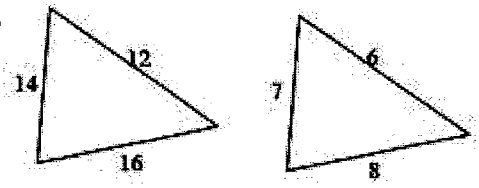
$50+45+x=180$

$95+x=180$

$x=85$

~ by AA~

c.



$\frac{12}{6}=2$ $\frac{14}{7}=2$ $\frac{16}{8}=2$

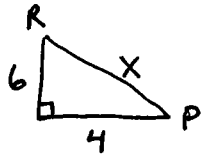
~ by SSS~

14. For the points $R(-2, 7)$ and $P(2, 1)$ determine each of the following:

a. The slope of the line through the points.

$m=\frac{1-7}{2-(-2)}=\frac{-6}{4}=-\frac{3}{2}$

b. The distance between the points.



$6^2+4^2=x^2$

$52=x^2$

$\sqrt{52}=x$

c. An equation of the line $\overline{RP}$.

$1=-\frac{3}{2}(2)+b$ → $4=b$

$1=-3+b$

$y=-\frac{3}{2}x+4$

d. An equation of the line perpendicular to line $\overline{RP}$ and passing through point P.

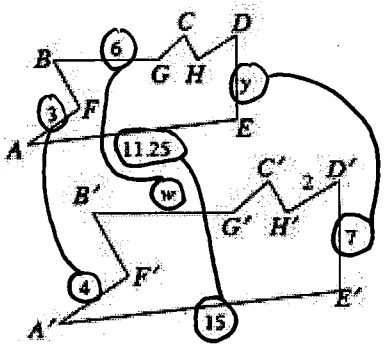
$m=\frac{2}{3}$ $P(2,1)$ $1=\frac{2}{3}(2)+b$ → $-\frac{1}{3}=b$

$1=\frac{4}{3}+b$

$y=\frac{2}{3}x-\frac{1}{3}$

15. Each pair of figures below is similar. Find the lengths of the unknown sides that are marked with a variable.

a.



$\frac{y}{7}=\frac{3}{4}$

$4y=21$

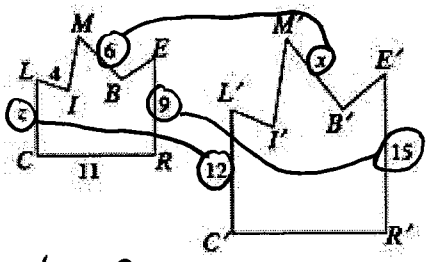
$y=\frac{21}{4}$

$\frac{6}{w}=\frac{3}{4}$

$24=3w$

$8=w$

b.



$\frac{6}{x}=\frac{9}{15}$

$90=9x$

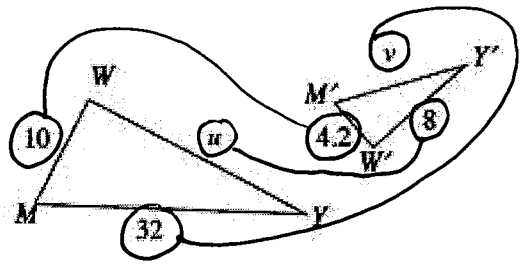
$10=x$

$\frac{z}{12}=\frac{9}{15}$

$15z=108$

$z=\frac{36}{5}$

c.



$\frac{10}{4.2} = \frac{u}{8}$

$80 = 4.2u$

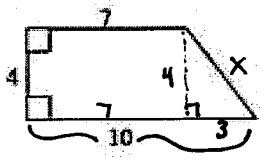
$\frac{400}{21} = u$

$\frac{10}{4.2} = \frac{32}{V}$

$10V = 134.4$

$V = 13.44$ or $\frac{336}{25}$

16. Find the area and perimeter of the following figure.



$A = \frac{1}{2}h(b_1+b_2)$

$A = \frac{1}{2}(4)(7+10)$

$A = 2(17)$

$A = 34\ u^2$

$3^2 + 4^2 = x^2$

$25 = x^2$

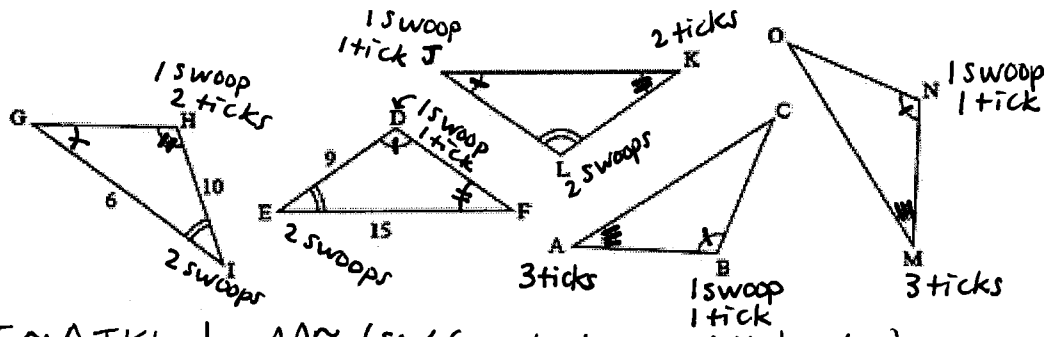
$\sqrt{25} = x$

$5 = x$

$P = 7+4+10+5$

$P = 26\ u$

17. Among the triangles below are pairs of similar triangles. Find the pairs of similar triangles and state the triangle similarity condition that you used to determine that the triangles are similar.



$\triangle GHI \sim \triangle JKL$ by AA~ (so $\angle G$ gets 1 swoop 1 tick also)

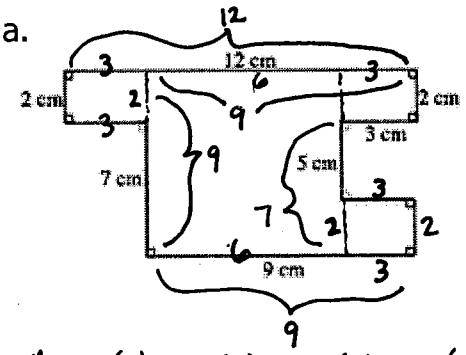
$\triangle GHI \sim \triangle DFE$ by AA~ (so $\angle F$ gets 1 swoop 2 ticks also)

$\triangle DFE \sim \triangle JKL$ by AA~ and $\triangle ABC \sim \triangle MNO$ by AA~

Chapter 4

18. For each figure below, find the area and the perimeter.

a.



$A = 2(3) + 6(9) + 2(3) + 2(3)$

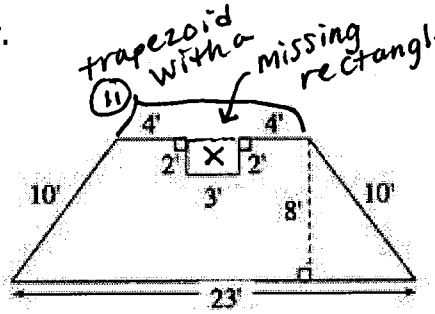
$A = 6 + 54 + 6 + 6$

$A = 72\ cm^2$

$P = 2+12+2+3+5+3+2+9+7+3$

$P = 48\ cm$

b.



trapezoid rectangle

$A = \frac{1}{2}h(b_1+b_2) - bh$

$A = \frac{1}{2}(8)(11+23) - 3(2)$

$A = 4(34) - 6$

$A = 136 - 6$

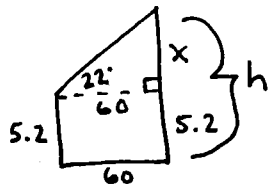
$A = 130\ ft^2$

$P = 10+4+2+3+2+4+10+23$

$P = 58\ ft$

19. Leon is standing 60 feet from a telephone pole. As he looks up, a red-tailed hawk lands on the top of the pole. Leon's angle of sight up to the bird is 22° and his eyes are 5.2 feet above the ground.

a. Draw a detailed picture of this situation. Label it with all of the given information.



$h = x + 5.2$

b. How tall is the pole? Show all of your work. Round your final answer to the nearest hundredth.

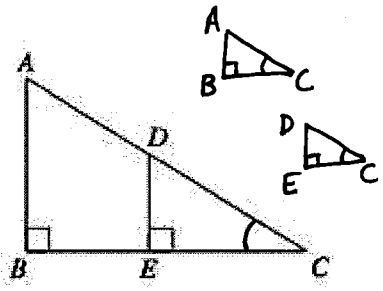
$\frac{\tan(22)}{1} = \frac{x}{60}$

$60 \cdot \tan(22) = x$

$h = 60 \cdot \tan(22) + 5.2$

$h \approx 29.44$ ft

20. Are the triangles at right similar? If so, write a flowchart that justifies your conclusion. If not, explain how you know.



$\angle ABC \cong \angle DEC$ $\quad$ $\angle ACB \cong \angle DCE$

$\triangle ABC \sim \triangle DEC$ AA~

21. Eddie told Alfred, *"I'll bet if I flip three coins I can get exactly two heads."* Alfred replied, *"I'll bet I can get exactly two heads if I flip four coins!"* Eddie scoffed, *"Well, so what? That's easier."* Alfred argued, *"No, it's not. It's harder."* Who is correct? Show all of your work and be prepared to defend your conclusion.

Sample Space (from a tree diagram)

4 coins

HHHH	HTHH	THHH	TTHH
HHHT	HTHT	THHT	TTHT
HHTH	HTTH	THTH	TTTH
HHTT	HTTT	THTT	TTTT

$P(2H \text{ in } 4 \text{ coins}) = \frac{6}{16} = \frac{3}{8}$

3 coin Sample Space

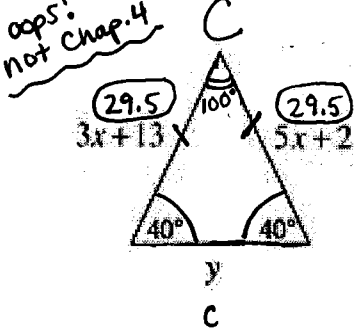
HHH	THH
HHT	THT
HTH	TTH
HTT	TTT

same probability!

$P(2H \text{ in } 3 \text{ coins}) = \frac{3}{8}$

22. Use geometric relationships to solve for the given variable(s).

oops! not chap. 4



$3x + 13 = 5x + 2$

$13 = 2x + 2$

$11 = 2x$

$\frac{11}{2} = x$

$5(\frac{11}{2}) + 2 = 29.5$

Law of Cosines!

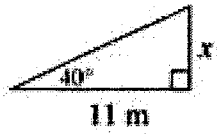
$y^2 = 29.5^2 + 29.5^2 - 2(29.5)(29.5) \cdot \cos(100)$

$y = \sqrt{1740.5 - 1740.5 \cdot \cos(100)}$

$y \approx 45.20$

23. Solve for the missing side length or angle below. Round your final answers to the nearest hundredth.

a.



$\frac{\tan(40)}{1} = \frac{x}{11}$

$11 \cdot \tan(40) = x$

$9.23\text{ m} \approx x$

b.

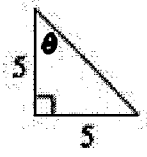
$\frac{\tan(52)}{1} = \frac{7}{x}$

$x \cdot \tan(52) = 7$

$x = \frac{7}{\tan(52)}$

$x \approx 5.47\text{ m}$

c.

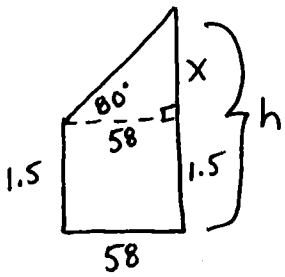


$\tan(\theta) = \frac{5}{5}$

$\theta = \tan^{-1}\left(\frac{5}{5}\right)$

$\theta = 45°$

24. Salvador has a hot dog stand 58 meters from the base of the Space Needle in Seattle. He prefers to work in the shade and knows that he can calculate when his hotdog stand will be in the shade if he knows the height of the Space Needle. To measure its height, Salvador stands at the hotdog stand, gets out his clinometer, and measures the angle to the top of the Space Needle to be 80°. Salvador's eyes are 1.5 meters above the ground. Assuming that the ground is level between the hotdog stand and the Space Needle, how tall is the Space Needle? Show all of your work and round your final answer to the nearest hundredth.



$h = x + 1.5$

$\frac{\tan(80)}{1} = \frac{x}{58}$

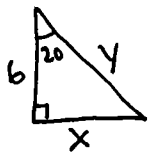
$58 \cdot \tan(80) = x$

$h = 58 \cdot \tan(80) + 1.5$

$h \approx 330.43\text{ m}$

Chapter 5

25. Find the area and the perimeter of the figure below. Show all of your work and round your final answer to the nearest hundredth.



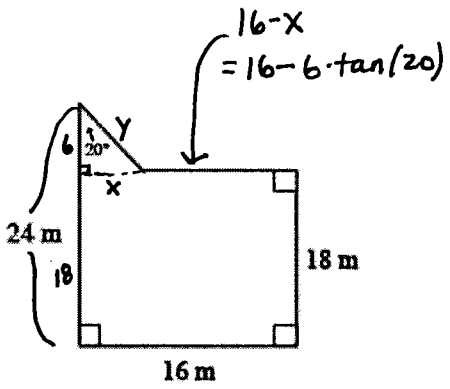
$\frac{\tan(20)}{1} = \frac{x}{6}$

$6 \cdot \tan(20) = x$

$\frac{\cos(20)}{1} = \frac{6}{y}$

$y \cdot \cos(20) = 6$

$y = \frac{6}{\cos(20)}$



$P = 24 + 16 + 18 + 16 - 6 \cdot \tan(20) + \frac{6}{\cos(20)}$

$P = 74 - 6 \cdot \tan(20) + \frac{6}{\cos(20)}$

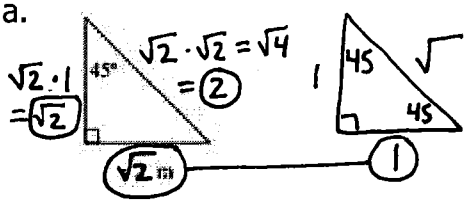
$P \approx 78.20\text{ m}$

$A = \frac{1}{2}(6 \cdot \tan(20))(6) + 16(18)$

$A = 294.55\text{ m}^2$

26. For each triangle below, use your triangle shortcuts to find the missing side lengths. Then find the area and perimeter of the triangle. Give your answers in **exact form** (no decimals).

a.



$zf = \frac{\sqrt{2}}{1} = \sqrt{2}$

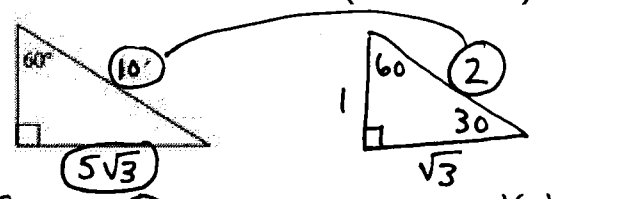
$A = \frac{1}{2}(\sqrt{2})(\sqrt{2})$

$A = \frac{1}{2}(\sqrt{4})$

$A = \frac{1}{2}(2) = 1\,m^2$

$P = \sqrt{2}+\sqrt{2}+2 = 2\sqrt{2}+2\ m$

b.



$zf = \frac{10}{2} = 5$

$A = \frac{1}{2}(5\sqrt{3})(5)$

$A = 12.5\sqrt{3}\ ft^2$

$P = 5+10+5\sqrt{3} = 15+5\sqrt{3}\ ft$

27. In a random sample of 10,000 college students, a research company found that 35.7% were involved in a club and 27.8% studied 4 or more hours per day. When they reported their findings, the research company indicated that 53.4% of college students were either involved in a club or they studied 4 or more hours per day. Given this information, what is the probability that a college student is involved in a club and studies 4 or more hours per day?

$P(\text{club}) + P(\text{Study}) - P(\text{Club and study}) = P(\text{Club or study})$

↖ Addition Rule!

$35.7 + 27.8 - P = 53.4$

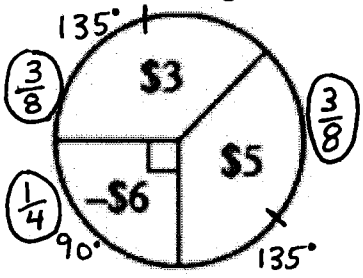
$63.5 - P = 53.4$

$-P = -10.1$

$P = 10.1\%$

P(student is in a club and studies 4 or more hours/day)

28. The probability of winning \$3 on the spinner at right is equal to the chance of winning \$5. Find the expected value for one spin. Is this game fair? Explain.



$x + x + 90 = 360$

$2x + 90 = 360$

$2x = 270$

$x = 135$

$\frac{135}{360} = \frac{3}{8}$ $\quad \frac{90}{360} = \frac{1}{4}$

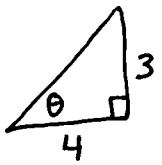
$\frac{3}{8}(3) + \frac{3}{8}(5) + \frac{1}{4}(-6) = EV$

$\frac{9}{8} + \frac{15}{8} - \frac{3}{2} = EV$

$\frac{3}{2} = EV = \$1.50$

not Fair. EV is not 0.

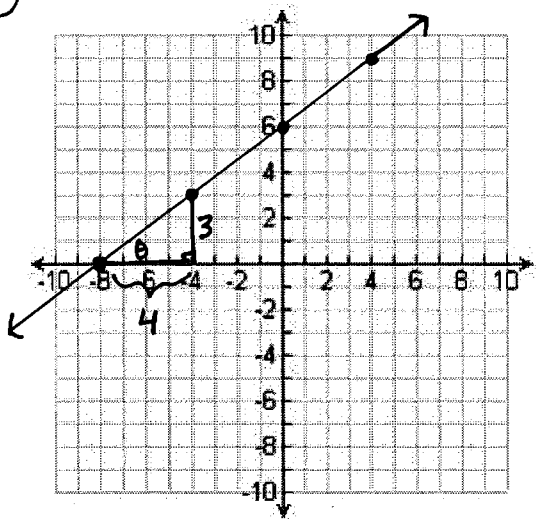
29. Graph the line $y = \frac{3}{4}x + 6$. Then find the slope angle (the acute angle the line makes with the x-axis).



$\tan(\theta) = \frac{3}{4}$

$\theta = \tan^{-1}\left(\frac{3}{4}\right)$

$\theta \approx 36.87°$



30. In parts (a) and (b) rewrite the expression without parentheses. In parts (c) and (d) solve each equation.

a. $2x(x+3)$

$= 2x^2+6x$

b. $(3x+2)(x-3)$ * generic rectangle...

$= 3x^2-9x+2x-6$

$= 3x^2-7x-6$

c. $x^2-8x+7=0$

$(x-7)(x+1)=0$

$x-7=0$ or $x+1=0$

$x=7$ or $x=-1$

d. $20y^2+9y=18$

$20y^2+9y-18=0$

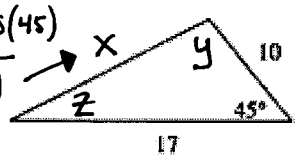
$(4y-3)(5y+6)=0$

$4y-3=0$ or $5y+6=0$

$4y=3 \quad 5y=-6$

$y=\frac{3}{4}$ or $y=-\frac{6}{5}$

31. Solve for the missing side lengths and angles in the triangle below. Show all of your work and round your final answer to the nearest hundredth.



$x^2 = 10^2+17^2-2(10)(17)\cdot\cos(45)$

$x=\sqrt{389-340\cdot\cos(45)}$

$x \approx 12.19$

$z+y+45=180 \rightarrow z=135-y$

$z = 135-\sin^{-1}\left(\frac{17\cdot\sin(45)}{\sqrt{389-340\cdot\cos(45)}}\right)$

$z \approx 54.54°$

$\frac{\sin(y)}{17} = \frac{\sin(45)}{\sqrt{389-340\cdot\cos(45)}}$

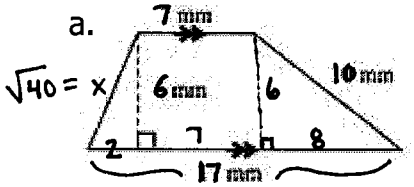
$\sin(y) = \frac{17\cdot\sin(45)}{\sqrt{389-340\cdot\cos(45)}}$

$y = \sin^{-1}\left(\frac{17\cdot\sin(45)}{\sqrt{389-340\cdot\cos(45)}}\right)$

$y \approx 80.46°$

32. Find the area and perimeter of each shape below. Show all of your work and round your final answers to the nearest hundredth.

a.



$2^2+6^2=x^2$

$40=x^2$

$\sqrt{40}=x$

$A=\frac{1}{2}(6)(7+17)$

$A=3(24)$

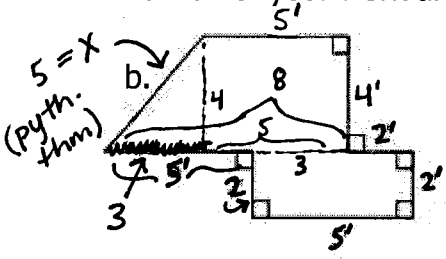
$A=72\,mm^2$

$P=7+10+17+\sqrt{40}$

$P=34+\sqrt{40}$

$P \approx 40.32\,mm$

b.



$A=\frac{1}{2}(4)(8+5)+2(5)$

$A=2(13)+10$

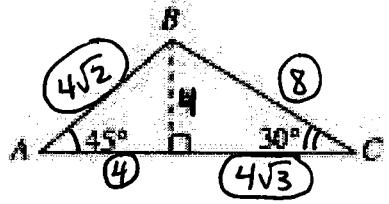
$A=26+10$

$A=36\,ft^2$

$P=5+5+4+2+2+5+2+5$

$P=30\,ft$

33. Find the area and perimeter of ΔABC below. Show all of your work. Give your answers in **exact** form (no decimals).



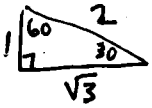
$A=\frac{1}{2}(4)(4)+\frac{1}{2}(4\sqrt{3})(4)$

$A=8+8\sqrt{3}\,u^2$

$P=4\sqrt{2}+4+4\sqrt{3}+8$

$P=12+4\sqrt{2}+4\sqrt{3}\,u$

$zf=\frac{4}{1}=4$



$zf=\frac{4}{1}=4$

34.

a. Give an equation for the sequence

$t(n) = 1, 4, 7, 10, \ldots$ (+3) zeroth term = 1 − 3 = (−2)

$t(n) = 3n - 2$

b. Give an equation for the sequence

$t(n) = 3, \frac{3}{2}, \frac{3}{4}, \frac{3}{8}, \ldots$ (×½) zeroth term = 3 ÷ ½ = (6)

$t(n) = 6 \cdot \frac{1}{2}^n$

c. Write an explicit rule for the following arithmetic sequence.

n	t(n)
1	17
2	10
3	3
4	−4

−14 = −7, −7

zeroth term = 17 + 7 = 24

$t(n) = -7n + 24$

d. Write an explicit rule for the following geometric sequence.

n	t(n)
1	6
2	7.2
3	8.64
4	10.368

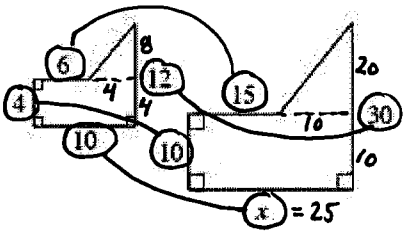
×1.2

zeroth term = 6 ÷ 1.2 = (5)

$t(n) = 5(1.2)^n$

Chapter 6

35. The two shapes to the right are similar.



a. Find the value of x. Show all work.

$\frac{10}{x} = \frac{4}{10}$

$4x = 100$

$x = 25$

b. Find the area of each shape.

Small shape: $A = \frac{1}{2}(4)(8) + 10(4)$

$A = 16 + 40$

$A = 56\ u^2$

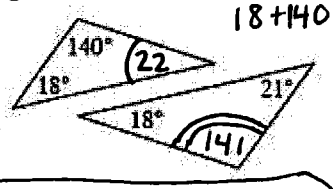
Large shape: $A = \frac{1}{2}(10)(20) + 25(10)$

$A = 100 + 250$

$A = 350\ u^2$

36. For each pair of triangles below, decide if the pair is similar, congruent or neither. Justify your conclusion with a flowchart or the reasons why the triangles cannot be similar or congruent. Assume that the diagrams are not drawn to scale.

a.



18 + 140 + x = 180

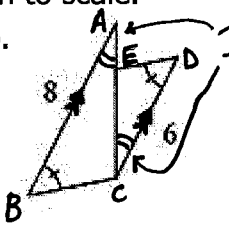
x = 22

18 + 21 + y = 180

y = 141

not ~. corr. ∠'s are not ≅.

b.



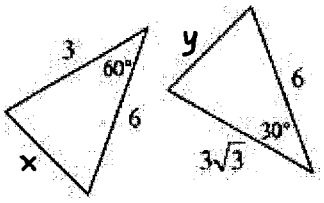
If ||, alt. int. ∠'s ≅

∠BAC ≅ ∠DCA ∠B ≅ ∠D

↓ ↓

△ABC ~ △CDE AA~

37. As Samone looked at the triangles below, she said, "*I think these triangles are congruent.*" Her teammate, Darla, said, "*But they don't look the same. How can you tell?*" Samone smiled and said, "Never trust the picture! Look at the angles and the sides. The measures are all the same."



a. Solve for the missing side of each triangle. How do they compare?

$y^2 = (3\sqrt{3})^2 + 6^2 - 2(3\sqrt{3})(6)\cdot\cos(30)$

$y = \sqrt{63 - 36\sqrt{3}\cdot\cos(30)}$

$y = 3$

$x^2 = 3^2 + 6^2 - 2(3)(6)\cdot\cos(60)$

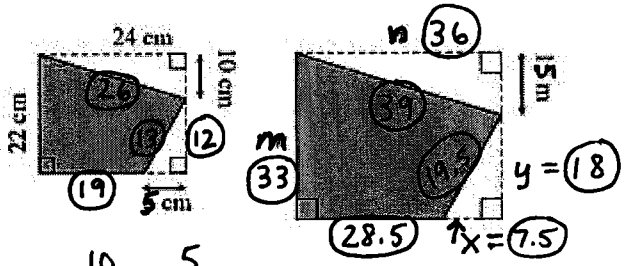
$x = \sqrt{45 - 36\cdot\cos(60)}$

$x \approx 5.20$ (exactly the same thing as $3\sqrt{3}$)

b. Are you convinced that Samone is correct? Explain.

yes. there are 3 sets of $\cong$ sides (2f=1).

38. The shaded figures to the right are similar.



a. Solve for m and n.

$\frac{10}{15} = \frac{22}{m}$ $\quad 10m = 330$ $\quad m = 33$ cm

$\frac{10}{15} = \frac{24}{n}$ $\quad 10n = 360$ $\quad n = 36$ cm

$\frac{10}{15} = \frac{12}{y}$ $\quad 10y = 180$ $\quad y = 18$

$\frac{10}{15} = \frac{5}{x}$ $\quad 10x = 75$ $\quad x = 7.5$

b. Find the area and perimeter of each figure.

Small: $P = 22+26+13+19$ $\quad P = 80$ cm

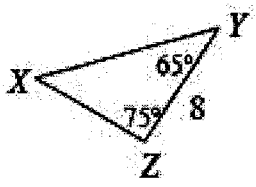
$A = 24(22) - \frac{1}{2}(24)(10) - \frac{1}{2}(5)(12)$ $\quad A = 378\ cm^2$

large: $P = 33+39+19.5+28.5$ $\quad P = 120$ cm

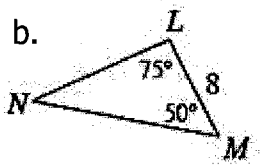
$A = 36(33) - \frac{1}{2}(36)(15) - \frac{1}{2}(7.5)(18)$ $\quad A = 850.5\ cm^2$

39. Decide if each triangle below is congruent to ΔABC at right, similar but not congruent to ΔABC, or neither. Justify each answer. If you decide that they are congruent, organize your reasoning into a flowchart.

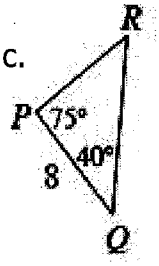
a.



b.



c.



oops! where is ΔABC? :)