

## unit 5 study Guides

$$1. (3x^2 - 4x) + (3x^2 - 4x) + (7 - 2x) + (7 - 2x) + (5x^2 + 7x + 3)$$

$$5x^2 + 3x^2 + 3x^2 + 7x - 4x - 4x - 2x - 2x + 7 + 7 + 3$$

$$11x^2 - 5x + 17 = \text{Perimeter}$$

$$2. (3ab + 4a^2) + (2a^2) + (3b^2) + (6b^2 - 5ab)$$

$$4a^2 + 2a^2 + 3ab - 5ab + 6b^2 + 3b^2$$

$$6a^2 - 2ab + 9b^2 = \text{Perimeter}$$

$$3. A = \frac{(d_1)(d_2)}{2} \quad d_1 = (7.1)(2)$$

$$d_1 = 14.2 \text{ cm}$$

$$150 = \frac{(2x)(3x)}{2}$$

$$d_2 = (7.1)(3)$$

$$300 = 6x^2$$

$$d_2 = 21.3 \text{ cm}$$

$$x^2 = 50$$

$$x = 7.1$$

$$4. V = \frac{\pi r^2 h}{3} \quad V = \frac{(3.14)(7)^2(h)}{3}$$

$$V = \frac{153.86h}{3}$$

← NO height given, so leave this as answer

$$5. V = \pi r^2 h \quad V = (3.14)(9)^2(8)$$

$$V = 2034.72 \text{ units}^3$$

$$6. SA = 4\pi r^2$$

$$904.32 = 4(3.14)r^2 \quad r^3 = 216$$

$$SA = 4(3.14)(6)^2$$

$$SA = 452.16 \text{ in}^2$$

$$V = \frac{4\pi r^3}{3}$$

$$2712.96 = 12.56r^3$$

$$r = 6$$

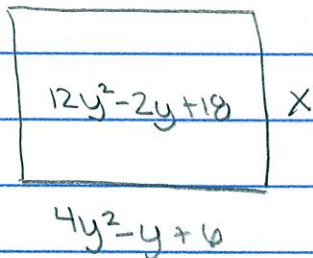
$$7. \quad V = \frac{Bh}{3} \quad V = \frac{(x-3)(x-3)(9x)}{3}$$

$$V = \frac{(x^2 - 6x + 9)(9x)}{3}$$

$$V = \frac{9x^3 - 54x^2 + 81x}{3}$$

$$V = 3x^3 - 18x^2 + 27x \text{ units}^3$$

8.



$$P = 2L + 2W$$

$$12y^2 - 2y + 18 = 2x + 2(4y^2 - y + 6)$$

$$12y^2 - 2y + 18 = 2x + 8y^2 - 2y + 12$$

$$-8y^2 + 2y + 12 \quad -8y^2 + 2y + 12$$

$$\frac{4y^2 + 30}{2} = \frac{2x}{2}$$

$$x = 2y^2 + 15$$

$$\text{Length} = 2y^2 + 15$$

$$9. \quad \text{Area}_{\text{shade}} = A_{\text{big}} - A_{\text{little}}$$

$$A_{\text{big}} = 4x(5x-2) \\ = 20x^2 - 8x$$

$$A_{\text{little}} = (3x)(3x) \\ = 9x^2$$

$$A_{\text{shade}} = (20x^2 - 8x) - (9x^2) \\ = 11x^2 - 8x$$

$$10. \quad A = \frac{h(b_1 + b_2)}{2}$$

$$A = \frac{4(3+6)}{2} = \frac{4(9)}{2} = \frac{36}{2} = 18 \text{ m}^2$$

11. Cone

$$12. \quad (x+4)^2 + (y-6)^2 = 19^2$$

$$(x+4)^2 + (y-6)^2 = 361$$

$$13. \quad (x-5)^2 + (y+3)^2 = r^2$$

$$(-2-5)^2 + (-8+3)^2 = r^2$$

$$(-7)^2 + (-5)^2 = r^2$$

$$49 + 25 = r^2$$

$$74 = r^2$$

$$(x-5)^2 + (y+3)^2 = 74$$

14. Midpoint means middle!

Middle means 2 equal halves!

$$\overline{AT} = \overline{TB}$$

$$3x-12 = x+8$$

$$2x-12 = 8$$

$$2x = 20$$

$$x = 10$$

$$\overline{AT} = (3)(10) - 12 = 30 - 12 = 18$$

$$\overline{TB} = 10 + 8 = 18$$

$$\overline{AB} = 18 + 18 = 36$$



$$15. \quad d = \sqrt{(9+5)^2 + (3-1)^2}$$

$$d = \sqrt{(14)^2 + (2)^2}$$

$$d = \sqrt{196 + 4}$$

$$d = \sqrt{200}$$

$$\begin{array}{c} 20 \quad 10 \\ \uparrow \quad \uparrow \\ 4 \quad 5 \quad 3 \quad 2 \end{array}$$

$$22$$

$$d = 10\sqrt{2}$$

$$16. \quad x_m = \frac{-5+3}{2} = \frac{-2}{2} = -1$$

$$y_m = \frac{9-7}{2} = \frac{2}{2} = 1$$

$$M(-1, 1)$$

$$17. \quad 3 = \frac{0+x}{2} \quad -2 = \frac{6+y}{2}$$

$$6 = x$$

$$-4 = 6+y$$

$$-10 = y$$

$$T(6, -10)$$

$$18. \quad \frac{42}{35} = \frac{6}{5}$$

$$\frac{14}{10} = \frac{7}{5}$$

Not similar!

$$19. \quad \frac{28}{21} = \frac{4}{3}$$

$$\frac{24}{18} = \frac{4}{3}$$

$$\frac{22}{16.5} = \frac{4}{3}$$

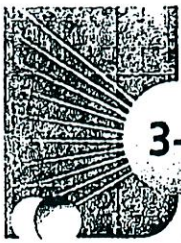
yes! Similar!  
Scale Factor = 4:3

(draw)

(draw)

(draw)

(draw)

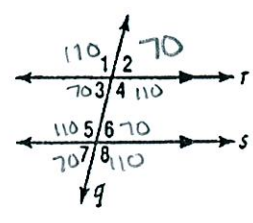


# 3-2 Skills Practice

## Angles and Parallel Lines

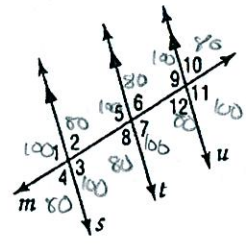
In the figure,  $m\angle 2 = 70$ . Find the measure of each angle.

- 1.  $\angle 3$   $70^\circ$
- 2.  $\angle 5$   $110^\circ$
- 3.  $\angle 8$   $110^\circ$
- 4.  $\angle 1$   $110^\circ$
- 5.  $\angle 4$   $110^\circ$
- 6.  $\angle 6$   $70^\circ$



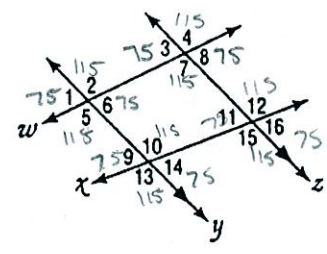
In the figure,  $m\angle 7 = 100$ . Find the measure of each angle.

- 7.  $\angle 9$   $100^\circ$
- 8.  $\angle 6$   $80^\circ$
- 9.  $\angle 8$   $80^\circ$
- 10.  $\angle 2$   $80^\circ$
- 11.  $\angle 5$   $100^\circ$
- 12.  $\angle 11$   $100^\circ$



In the figure,  $m\angle 3 = 75$  and  $m\angle 10 = 115$ . Find the measure of each angle.

- 13.  $\angle 2$   $115^\circ$
- 14.  $\angle 5$   $115^\circ$
- 15.  $\angle 7$   $115^\circ$
- 16.  $\angle 15$   $115^\circ$
- 17.  $\angle 14$   $75^\circ$
- 18.  $\angle 9$   $75^\circ$



Lesson 3-2

Find  $x$  and  $y$  in each figure.

19. 
$$5x + 40 = 180$$

$$5x = 140$$

$$x = 28$$

$$3y - 1 = 140$$

$$3y = 141$$

$$y = 47$$

20. 
$$8x - 10 = 7x$$

$$x - 10 = 0$$

$$x = 10$$

$$6y + 20 + 70 = 180$$

$$6y + 90 = 180$$

$$6y = 90$$

$$y = 15$$

Find  $m\angle 1$  in each figure.

21. 
$$m\angle 1 = 80^\circ$$

22. 
$$m\angle 1 = 72^\circ$$