

Study Guide 1.1-1.3

1. $x = \#$ of toppings

$$3 + 8 + 0.25x \leq 20$$

$$0.25x + 11 \leq 20$$

2. $0.25x + 11 \leq 20$

$$0.25x \leq 9$$

$$x \leq 36 \text{ toppings}$$

3. $x = \#$ of hours worked

$$5000 + 10x \geq 10000$$

4. $5000 + 10x \geq 10000$

$$10x \geq 5000$$

$$x \geq 500 \text{ hours}$$

5.
$$\frac{85 + 95 + 80 + 2x}{5} = 89.6$$

$$260 + 2x = 448$$

$$2x = 188$$

$$x = 94\%$$

6.
$$\frac{80 + 90 + 98 + 2x}{5} = 91.6$$

$$268 + 2x = 458$$

$$2x = 190$$

$$x = 95\%$$

7. $2(x+10) = 5x + 20$ $-3x = 40$

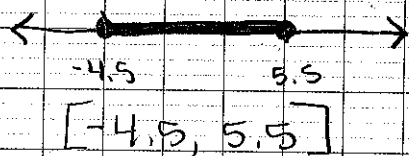
$$2x - 20 = 5x + 20$$

$$x = -40/3$$

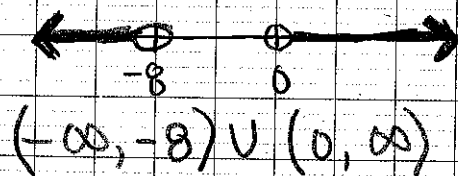
$$\begin{aligned}
 8. \quad 12 - 2(2x + 4) &= 28 \\
 12 - 4x - 8 &= 28 \\
 -4x + 4 &= 28 \\
 -4x &= 24 \\
 x &= -6
 \end{aligned}$$

$$\begin{aligned}
 9. \quad 2|x - 8| - 3 &= 5 \\
 2|x - 8| &= 8 \\
 |x - 8| &= 4 \\
 x - 8 &= 4 \quad \text{or} \quad x - 8 = -4 \\
 x &= 12 \quad \text{or} \quad x = 4
 \end{aligned}$$

$$\begin{aligned}
 10. \quad |2x - 1| &\leq 10 \\
 -10 &\leq 2x - 1 \leq 10 \\
 -9 &\leq 2x \leq 11 \\
 -4.5 &\leq x \leq 5.5
 \end{aligned}$$



$$\begin{aligned}
 11. \quad 2|x + 4| - 3 &> 5 \\
 2|x + 4| &> 8 \\
 |x + 4| &> 4 \\
 x + 4 &> 4 \quad \text{or} \quad x + 4 < -4 \\
 x &> 0 \quad \text{or} \quad x < -8
 \end{aligned}$$



$$\begin{aligned}
 12. \quad 2|x + 3| + 10 &< 8 \\
 2|x + 3| &< -2 \\
 |x + 3| &< -1 \\
 \text{NO SOLUTION}
 \end{aligned}$$

$$\begin{aligned}
 13. \quad 2(n - 10) - 12 &= 28 \\
 2n - 20 - 12 &= 28 \\
 2n - 32 &= 28 \\
 2n &= 60 \\
 n &= 30
 \end{aligned}$$

$$\begin{aligned}
 14. \quad 14 - 3(n + 8) &= 4(n - 13) \\
 14 - 3n - 24 &= 4n - 52 \\
 -3n - 10 &= 4n - 52 \\
 -7n &= -42 \\
 n &= 6
 \end{aligned}$$

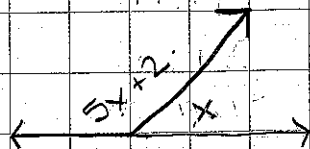
$$\begin{aligned}
 15. \quad a &= 40 \quad r = 10 \\
 |x - 40| &\leq 10 \\
 -10 &\leq x - 40 \leq 10 \\
 30 &\leq x \leq 50
 \end{aligned}$$

$$\begin{aligned}
 16. \quad a &= \frac{-4 + 4}{2} = \frac{0}{2} = 0 \\
 r &= 14 - 5 = 9
 \end{aligned}$$

$$|x - 5| > 9$$

Study Guide 1.4-1.6

1.



$$x + 5x + 2 = 180$$

$$6x + 2 = 180$$

$$6x = 178$$

$$x = 29.7$$

$$m\angle 1 = 29.7$$

$$m\angle 2 = 150.3$$

2.

$$4x - 16 = 2x + 16$$

$$2x - 16 = 16$$

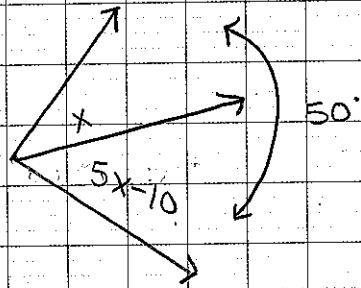
$$2x = 32$$

$$x = 16$$

$$m\angle 1 = 48^\circ$$

$$m\angle 2 = 48^\circ$$

3.



$$x + 5x - 10 = 50$$

$$6x - 10 = 50$$

$$6x = 100$$

$$x = 10$$

$$m\angle 1 = 10^\circ$$

$$m\angle 2 = 40^\circ$$

4.

$$2x + 5 + 3x + 5 = 90$$

$$5x + 10 = 90$$

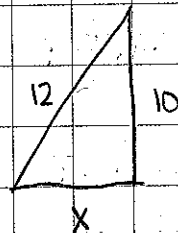
$$5x = 80$$

$$x = 16$$

$$m\angle 1 = 37^\circ$$

$$m\angle 2 = 53^\circ$$

5.



$$x^2 + 10^2 = 12^2$$

$$x^2 + 100 = 144$$

$$x^2 = 44$$

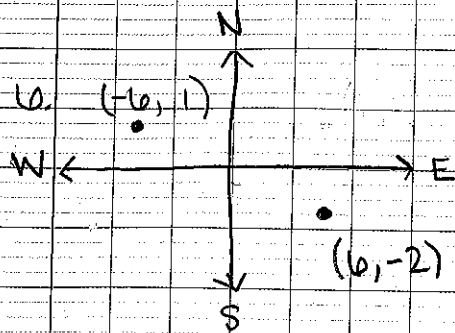
$$x = \sqrt{44}$$

$$\sqrt{44}$$

$$2 \sqrt{11}$$

$$2 \sqrt{11}$$

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



$$d = \sqrt{(-6-6)^2 + (1+2)^2}$$

$$d = \sqrt{(-12)^2 + (3)^2}$$

$$d = \sqrt{144+9}$$

$$d = \sqrt{153}$$

$$d = 12.4 \text{ blocks}$$

7. 12, 9, 6, 3, 0, -3, -6 Next = Now - 3

8. 5, 23, 113, 563, 2813, 14063, 70313 Next = 5 Now

9.

Statement	Reason
1. $14 - 2(x+5) = 28$	1. Given
2. $14 - 2x - 10 = 28$	2. Distributive prop
3. $-2x + 4 = 28$	3. Simplify
4. $-2x = 24$	4. Subtraction Prop.
5. $x = -12$	5. Division prop

10.

Statement	Reason
1. $12x - 2(x-6) + 10 = 102$	1. Given
2. $12x - 2x + 12 + 10 = 102$	2. Distributive prop
3. $10x + 22 = 102$	3. Simplify
4. $10x = 80$	4. Subtraction prop.
5. $x = 8$	5. Division prop