HONORS
Pre-Algebra
Summer Packet

For incoming 7th grade students who are planning to take HONORS Pre-Algebra

- If you are unsure of how to do any of the problems, please see KhanAcademy.com or other reputable math instruction website
- These are concepts that should be MASTERED before taking Honors Pre Algebra
- Students should NOT use a calculator when doing these problems.

- **This packet will NOT be taken for a grade.**

Name_____

Order of Operations

Solve each expression using order of operations without a calculator.

(1) $(10 + 2 - 2) \bullet 6 - 1$

(2) $\frac{1}{5-2} \bullet (3+6) \bullet 3$

(3) $(2 + 6 \bullet 2 + 2 - 4) \bullet 2$

(4) $\frac{-43+1}{4+2} + 3$

(5) $\frac{45}{8(5-4)-3}$

(6) $3(5 - 7) + 3(\frac{6}{2})$

(7) $(6 - 4) \bullet (49/7)$

(8) $\frac{-27}{2+3+4} + 3$

(9) $(8 + 5) \bullet \frac{35}{7} + 6/2$

(10) $1 + 1 - 1 \bullet 0 - 4 + 4 - 4 \bullet 0 + 4$

Order of Operations

Solve each expression using order of operations.

1. $(10 + 2 - 2) \bullet 6 - 1$

$10 \cdot 6 - 1$

$60 - 1$

59

2. $\frac{1}{5-2} \bullet (3+6) \bullet 3$

$\frac{1}{3} \cdot 9 \cdot 3$

9

3. $(2 + 6 \bullet 2 + 2 - 4) \bullet 2$

$12 \cdot 2$

24

4. $\frac{-43+1}{4+2} + 3$

$\frac{-42}{6} + 3$

$-7 + 3$

-4

5. $\frac{45}{8(5-4)-3}$

$\frac{45}{8(1)-3} = \frac{45}{8-3} =$

$\frac{45}{5} = 9$

6. $3(5 - 7) + 3(\frac{6}{2})$

$3(-2) + 3(3)$

$-6 + 9$

3

7. $(6 - 4) \bullet (49/7)$

$2 \cdot 7$

14

8. $\frac{-27}{2+3+4} + 3$

$\frac{-27}{9} + 3$

$-3 + 3$

0

9. $(8 + 5) \bullet \frac{35}{7} + 6/2$

$13 \cdot 5 + 3$

$65 + 3$

68

10. $1 + 1 - 1 \bullet 0 - 4 + 4 - 4 \bullet 0 + 4$

$1 + 1 + 0 - 4 + 4 + 0 + 4$

6

Name _____

Pre AP Pre Algebra summer packet Adding and Subtracting Decimals

Find the sum or difference without a calculator.

(1) 6.2 + 3.4

(2) 8.04 - 6.8

(3) 12.4 + 0.899

(4) 12.90 - 2.043

(5) 163.29 + 13.987

(6) 13 - 6.7

(7) 3.91 + 1.93

(8) 34.2 - 29.027

(9) 0.004 + 15.21

(10) 248.8 - .0078

Adding and Subtracting Decimals

Find the sum or difference.

1 6.2 + 3.4

$$\begin{array}{r} 6.2 \\ +\ 3.4 \\ \hline 9.6 \end{array}$$

2 8.04 - 6.8

$$\begin{array}{r} {\scriptstyle 7}\ \ {\scriptstyle 1} \\ 8.04 \\ -\ 6.80 \\ \hline 1.24 \end{array}$$

3 12.4 + 0.899

$$\begin{array}{r} {\scriptstyle 1}\ \ {\scriptstyle 1} \\ 12.400 \\ +\ \ .899 \\ \hline 13.299 \end{array}$$

4 12.90 - 2.043

$$\begin{array}{r} {\scriptstyle 8}\ \ {\scriptstyle 9} \\ 12.9\not{0}\,{}^{1}0 \\ -\ 2.043 \\ \hline 10.857 \end{array}$$

5 163.29 + 13.987

$$\begin{array}{r} {\scriptstyle 1}\ \ {\scriptstyle 1} \\ 163.290 \\ +\ 13.987 \\ \hline 177.277 \end{array}$$

6 13 - 6.7

$$\begin{array}{r} {\scriptstyle 2} \\ 13.\,{}^{1}0 \\ -\ 6.7 \\ \hline 6.3 \end{array}$$

7 3.91 + 1.93

$$\begin{array}{r} {\scriptstyle 1} \\ 3.91 \\ +\ 1.93 \\ \hline 5.84 \end{array}$$

8 34.2 - 29.027

$$\begin{array}{r} {\scriptstyle 2}\ \ {\scriptstyle 1}\ \ {\scriptstyle 9} \\ 34.\,{}^{1}2\,{}^{1}0 \\ -\ 29.027 \\ \hline 5.173 \end{array}$$

9 0.004 + 15.21

$$\begin{array}{r} .004 \\ +\ 15.21 \\ \hline 15.214 \end{array}$$

10 248.8 - .0078

$$\begin{array}{r} {\scriptstyle 7}\ {\scriptstyle 9}\ {\scriptstyle 9} \\ 248.8\not{0}\not{0}\,{}^{1}0 \\ -\ \ .0078 \\ \hline 248.7922 \end{array}$$

Name _____

Multiplying and Dividing Decimals

Find the product or quotient without a calculator.

(1) $9.2 \cdot 3.1$

(2) $(1.1)(6.78)$

(3) $0.045 \div 0.15$

(4) $2\overline{)7.45}$

(5) $(14.1)(2.7)$

(6) $(82.04)(1.2)$

(7) $4 \div 0.3$

(8) $91 \cdot 4.5$

(9) $13\overline{)1.56}$

(10) $2\overline{)8.4}$

Multiplying and Dividing Decimals

Find the product or quotient.

1 9.2 • 3.1

$$\begin{array}{r} 9.2 \\ \times\ 3.1 \\ \hline 92 \\ +\ 2760 \\ \hline 28.52 \end{array}$$

2 (1.1)(6.78)

$$\begin{array}{r} 6.78 \\ \times\ 1.1 \\ \hline 678 \\ +\ 6780 \\ \hline 7.458 \end{array}$$

3 0.045 ÷ 0.15

$$\begin{array}{r} 0.3 \\ .15\overline{)\,.045} \\ -45 \\ \hline 0 \end{array}$$

4 $2\overline{)\,7.45}$

$$\begin{array}{r} 3.725 \\ 2\overline{)\,7.45} \\ -6 \\ \hline 14 \\ -14 \\ \hline 05 \\ -4 \\ \hline 10 \\ -10 \\ \hline 0 \end{array}$$

5 (14.1)(2.7)

$$\begin{array}{r} {\scriptstyle 2}\ 14.1 \\ \times\ 2.7 \\ \hline 1\ 987 \\ +\ 2820 \\ \hline 38.07 \end{array}$$

6 (82.04)(1.2)

$$\begin{array}{r} 82.04 \\ \times\ 1.2 \\ \hline 16408 \\ +\ 82040 \\ \hline 98.448 \end{array}$$

7 4 ÷ 0.3

$$\begin{array}{r} 13.3 \\ .3\overline{)\,4.0} \\ -3 \\ \hline 10 \\ -9 \\ \hline 10 \end{array}$$

8 91 • 4.5

$$\begin{array}{r} 91 \\ \times\ 4.5 \\ \hline 1\ 455 \\ 3640 \\ \hline 409.5 \end{array}$$

9 $13\overline{)\,1.56}$

$$\begin{array}{r} .12 \\ 13\overline{)\,1.56} \\ 13 \\ \hline 26 \\ -26 \\ \hline 0 \end{array}$$

10 $2\overline{)\,8.4}$

$$\begin{array}{r} 4.2 \\ 2\overline{)\,8.4} \\ -8 \\ \hline 04 \end{array}$$

Name: _____

Pre AP Pre Algebra Summer: Fractions - adding and subtracting

Do not use a calculator

1. $\frac{1}{4}+\frac{1}{2}=$

2. $\frac{7}{15}+\frac{3}{10}=$

3. $\frac{11}{28}+\frac{4}{7}=$

4. $\frac{3}{4}+\frac{1}{2}=$

5. $4\frac{15}{16}+7\frac{3}{4}=$

6. $2\frac{16}{25}+3\frac{18}{20}=$

7. $3\frac{2}{5}+9\frac{1}{19}=$

8. $6\frac{1}{42}+4\frac{5}{6}=$

9. $18\frac{7}{9}+16=$

10. $4\frac{7}{8}+\frac{1}{3}=$

11. $\frac{7}{8}-\frac{1}{4}=$

12. $\frac{7}{9}-\frac{2}{6}=$

13. $9\frac{1}{6}-4\frac{1}{12}=$

14. $12\frac{18}{24}-8\frac{4}{5}=$

15. $5\frac{8}{9}-3\frac{2}{3}=$

16. $8\frac{12}{16}-7\frac{31}{32}$

17. $10\frac{3}{4}-6\frac{4}{5}=$

18. $13\frac{7}{8}-\frac{10}{12}=$

19. $3\frac{3}{14}-\frac{1}{7}$

20. $4\frac{3}{4}-2\frac{1}{8}=$

Name: _____

Pre AP Pre Algebra Summer: Fractions - adding and subtracting

Do not use a calculator

1 $\frac{1}{4}+\frac{1}{2}=$ $\frac{1}{4}+\frac{2}{4}=\boxed{\frac{3}{4}}$

2 $\frac{7}{15}+\frac{3}{10}=$ $\frac{14}{30}+\frac{9}{30}=\boxed{\frac{23}{30}}$

3 $\frac{11}{28}+\frac{4}{7}=$ $\frac{11}{28}+\frac{16}{28}=\boxed{\frac{27}{28}}$

4 $\frac{3}{4}+\frac{1}{2}=$ $\frac{3}{4}+\frac{2}{4}=\boxed{\frac{5}{4}}$

5 $4\frac{15}{16}+7\frac{3}{4}=4\frac{15}{16}+7\frac{12}{16}=11\frac{27}{16}$ $=\boxed{12\frac{11}{16}}$

6 $2\frac{16}{25}+3\frac{18}{20}=2\frac{64}{100}+3\frac{90}{100}=5\frac{154}{100}$ $=\boxed{6\frac{27}{50}}$

7 $3\frac{2}{5}+9\frac{1}{19}=3\frac{38}{95}+9\frac{5}{95}=\boxed{12\frac{43}{95}}$

8 $6\frac{1}{42}+4\frac{5}{6}=6\frac{1}{42}+4\frac{35}{42}=10\frac{36}{42}$ $\boxed{10\frac{6}{7}}$

9 $18\frac{7}{9}+16=\boxed{34\frac{7}{9}}$

10 $4\frac{7}{8}+\frac{1}{3}=4\frac{21}{24}+\frac{8}{24}=4\frac{29}{24}$ $\boxed{5\frac{5}{24}}$

11 $\frac{7}{8}-\frac{1}{4}=\boxed{\frac{5}{8}}$

12 $\frac{7}{9}-\frac{2}{6}=\frac{14}{18}-\frac{6}{18}=\frac{8}{18}=\boxed{\frac{4}{9}}$

13 $9\frac{1}{6}-4\frac{1}{12}=9\frac{2}{12}-4\frac{1}{12}=\boxed{5\frac{1}{12}}$

14 $12\frac{18}{24}-8\frac{4}{5}=12\frac{90}{120}-8\frac{96}{120}=$ $11\frac{210}{120}-8\frac{96}{120}=3\frac{114}{120}=$ $\boxed{3\frac{19}{20}}$

15 $5\frac{8}{9}-3\frac{2}{3}=\frac{53}{9}-\frac{11}{3}=$ $\frac{53}{9}-\frac{33}{9}=\frac{20}{9}=\boxed{2\frac{2}{9}}$

16 $8\frac{12}{16}-7\frac{31}{32}$ $\frac{140}{16}-\frac{255}{32}=\frac{280}{32}-\frac{25}{32}$ $=\boxed{\frac{25}{32}}$

17 $10\frac{3}{4}-6\frac{4}{5}=\frac{43}{4}-\frac{34}{5}=\frac{215}{20}-\frac{136}{20}$ $=\frac{79}{20}=\boxed{3\frac{19}{20}}$

18 $13\frac{7}{8}-\frac{10}{12}=$ $13\frac{21}{24}-\frac{20}{24}=\boxed{13\frac{1}{24}}$

19 $3\frac{3}{14}-\frac{1}{7}$ $3\frac{3}{14}-\frac{2}{14}=\boxed{3\frac{1}{14}}$

20 $4\frac{3}{4}-2\frac{1}{8}=4\frac{6}{8}-2\frac{1}{8}=\boxed{2\frac{5}{8}}$

Name: _____

Pre AP Pre Algebra Summer Packet: Fractions multiplication and division

Do not use a calculator

1. $\frac{1}{8} \cdot \frac{1}{7} =$

2. $\frac{3}{14} \cdot \frac{11}{33} =$

3. $\left(\frac{1}{2}\right)\left(\frac{9}{13}\right) =$

4. $\left(2\frac{1}{6}\right)\left(\frac{3}{5}\right) =$

5. $\left(8\frac{4}{5}\right)\left(1\frac{5}{11}\right) =$

6. $2\frac{1}{2} \cdot \frac{2}{5}$

7. $\left(9\frac{2}{3}\right)(6) =$

8. $13\frac{1}{3} \cdot 2\frac{1}{10} =$

9. $7 \cdot \frac{1}{3} =$

10. $\left(8\frac{4}{5}\right)\left(1\frac{5}{11}\right) =$

11. $\frac{5}{6} \div \frac{1}{4} =$

12. $\frac{3}{4} \div \frac{9}{12} =$

13. $\frac{21}{35} \div \frac{7}{25} =$

14. $\frac{6}{7} \div 3 =$

15. $1\frac{1}{4} \div 2\frac{1}{3}$

16. $5\frac{3}{6} \div 3 =$

17. $10\frac{1}{4} \div \frac{2}{5} =$

18. $3\frac{2}{3} \div 1\frac{1}{7} =$

19. $4\frac{3}{8} \div \frac{9}{10}$

20. $8 \div \frac{3}{4} =$

Name: _____

Pre AP Pre Algebra Summer Packet: Fractions multiplication and division

Do not use a calculator

1. $\frac{1}{8} \cdot \frac{1}{7} = \frac{1}{56}$

2. $\frac{8}{14} \cdot \frac{11}{33} = \frac{1}{14}$

3. $\left(\frac{1}{2}\right)\left(\frac{9}{13}\right) = \frac{9}{26}$

4. $\left(2\frac{1}{6}\right)\left(\frac{3}{5}\right) = \left(\frac{13}{6}\right)\left(\frac{3}{5}\right) = \frac{13}{10}$

5. $\left(8\frac{4}{5}\right)\left(1\frac{5}{11}\right) = \left(\frac{44}{5}\right)\left(\frac{16}{11}\right) = \frac{64}{5}$

6. $2\frac{1}{2} \cdot \frac{2}{5}$ $\frac{5}{2} \cdot \frac{2}{5} = 1$

7. $\left(9\frac{2}{3}\right)(6) = \frac{29}{3} \cdot \frac{6}{1} = 58$

8. $13\frac{1}{3} \cdot 2\frac{1}{10} = \frac{40}{3} \cdot \frac{21}{10} = 28$

9. $7 \cdot \frac{1}{3} = \frac{7}{3}$

10. $\left(8\frac{4}{5}\right)\left(1\frac{5}{11}\right) = \left(\frac{44}{5}\right)\left(\frac{16}{11}\right) = \frac{64}{5}$

11. $\frac{5}{6} \div \frac{1}{4} = \frac{5}{6} \cdot \frac{4}{1} = \frac{10}{3}$

12. $\frac{3}{4} \div \frac{9}{12} = \frac{3}{4} \cdot \frac{12}{9} = 1$

13. $\frac{21}{35} \div \frac{7}{25} = \frac{21}{35} \cdot \frac{25}{7} = \frac{15}{7}$

14. $\frac{6}{7} \div 3 = \frac{6}{7} \cdot \frac{1}{3} = \frac{2}{7}$

15. $1\frac{1}{4} \div 2\frac{1}{3}$ $\frac{5}{4} \cdot \frac{3}{7} = \frac{15}{28}$

16. $5\frac{3}{6} \div 3 = \frac{33}{6} \cdot \frac{1}{3} = \frac{11}{6}$

17. $10\frac{1}{4} \div \frac{2}{5} = \frac{41}{4} \cdot \frac{5}{2} = \frac{205}{8}$

18. $3\frac{2}{3} \div 1\frac{1}{7} = \frac{11}{3} \cdot \frac{7}{8} = \frac{77}{24}$

19. $4\frac{3}{8} \div \frac{9}{10}$ $\frac{35}{8} \cdot \frac{10}{9} = \frac{175}{36}$

20. $8 \div \frac{3}{4} = \frac{8}{1} \cdot \frac{4}{3} = \frac{32}{3}$

Answers may be left in improper fractions, but MUST be reduced.

Name: _____

Pre AP pre algebra summer - Integers

Do not use a calculator.

1. $-80 + 77 =$
2. $77 + 160 =$
3. $140 - (-92) =$
4. $-105 - (-122) =$
5. $-53 - (-59) =$
6. $-6 + -35$
7. $15 - (-26) - (-39) =$
8. $-93 + 191 + -179$
9. $-50 - (-93) + (-17) =$
10. $18 + (-34) + 52 =$
11. $60 \div 12 =$
12. $-194 \div (-2) =$
13. $88 \bullet (-2) =$
14. $-10 \bullet (-11) =$
15. $-28 \bullet (-22) \div (-88) =$
16. $108 \div (-12) \bullet (-12) =$
17. $-65 + 6 \div (-3) + 40 =$
18. $-15 - (-11) + 5 \bullet (-4) =$
19. $-84 \div 4 + (-20) =$
20. $-56 + (-50) + (-10) \bullet (-9) =$

Name: _____

Pre AP pre algebra summer - Integers

Do not use a calculator.

1. $-80 + 77 =$ -3
2. $77 + 160 =$ 237
3. $140 - (-92) =$ 232
4. $-105 - (-122) =$ 17
5. $-53 - (-59) =$ 6
6. $-6 + -35$ -41
7. $15 - (-26) - (-39) =$ 80
8. $-93 + 191 + -179$ -81
9. $-50 - (-93) + (-17) =$ 26
10. $18 + (-34) + 52 =$ 36
11. $60 \div 12 =$ 5
12. $-194 \div (-2) =$ 97
13. $88 \bullet (-2) =$ -176
14. $-10 \bullet (-11) =$ 110
15. $-28 \bullet (-22) \div (-88) =$ -7
16. $108 \div (-12) \bullet (-12) =$ 108
17. $-65 + 6 \div (-3) + 40 =$ -27
18. $-15 - (-11) + 5 \bullet (-4) =$ -24
19. $-84 \div 4 + (-20) =$ -41
20. $-56 + (-50) + (-10) \bullet (-9) =$ -16

Proportions

Solve each proportion without a calculator. Round to the nearest hundredth if necessary.

1 $\frac{10}{k} = \frac{8}{4}$

2 $\frac{8n}{16} = \frac{8}{3}$

3 $\frac{p}{8} = \frac{13}{2}$

4 $\frac{10}{12} = \frac{2}{m}$

5 $\frac{4}{19} = \frac{16}{3t}$

6 $\frac{2}{3} = \frac{17}{c}$

7 $\frac{3}{13} = \frac{p}{3}$

8 $\frac{2}{x} = \frac{7}{9}$

9 $\frac{2h}{15} = \frac{24}{5}$

10 $\frac{7}{10} = \frac{3}{x}$

Proportions

Solve each proportion without a calculator.

1. $\frac{10}{k} = \frac{8}{4}$

$\frac{8k}{8} = \frac{40}{8}$

$k = 5$

2. $\frac{8n}{16} = \frac{8}{3}$

$\frac{24n}{24} = \frac{128}{24}$

$n = 5.33$

3. $\frac{p}{8} = \frac{13}{2}$

$\frac{2p}{2} = \frac{104}{2}$

$p = 52$

4. $\frac{10}{12} = \frac{2}{m}$

$\frac{10m}{10} = \frac{24}{10}$

$m = 2.4$

5. $\frac{4}{19} = \frac{16}{3t}$

$\frac{12t}{12} = \frac{304}{12}$

$t = 25.33$

6. $\frac{2}{3} = \frac{17}{c}$

$\frac{2c}{2} = \frac{51}{2}$

$c = 25.5$

7. $\frac{3}{13} = \frac{p}{3}$

$\frac{13p}{13} = \frac{9}{13}$

$p = .69$

8. $\frac{2}{x} = \frac{7}{9}$

$\frac{7x}{7} = \frac{18}{7}$

$x = 2.57$

9. $\frac{2h}{15} = \frac{24}{5}$

$\frac{10h}{10} = \frac{360}{10}$

$h = 36$

10. $\frac{7}{10} = \frac{3}{x}$

$\frac{7x}{7} = \frac{30}{7}$

$x = 4.29$

Percent of a Number

Solve each problem without a calculator. Round to the nearest hundredth if necessary.

1 What percent of 29 is 3?

2 58% of what is 63.4?

3 1 is what percent of 52.6?

4 What percent of 38 is 1.5?

5 What is 12% of 17.5?

6 What percent of 72 is 13?

7 78% of 129 is what number?

8 18.5% of 29 is what number?

9 14 is what percent of 129?

10 140 is 97% of what number?

$$\frac{\text{part}}{\text{whole}} = \frac{\%}{100}$$

Percent of a Number

Solve each problem without a calculator. Round to the nearest hundredth if necessary.

1 What percent of 29 is 3?

$\frac{3}{29} = \frac{x}{100}$

$29x = 300$

$x = 10.34\%$

2 58% of what is 63.4?

$\frac{63.4}{x} = \frac{58}{100}$

$58x = 6340$

$x = 109.31$

3 1 is what percent of 52.6?

$\frac{1}{52.6} = \frac{x}{100}$

$52.6x = 100$

$x = 1.90\%$

4 What percent of 38 is 1.5?

$\frac{1.5}{38} = \frac{x}{100}$

$38x = 150$

$x = 3.95\%$

5 What is 12% of 17.5?

$\frac{x}{17.5} = \frac{12}{100}$

$100x = 210$

$x = 2.1$

6 What percent of 72 is 13?

$\frac{13}{72} = \frac{x}{100}$

$72x = 1300$

$x = 18.06\%$

7 78% of 129 is what number?

$\frac{x}{129} = \frac{78}{100}$

$100x = 10062$

$x = 100.62$

8 18.5% of 29 is what number?

$\frac{x}{29} = \frac{18.5}{100}$

$100x = 536.5$

$x = 5.37$

9 14 is what percent of 129?

$\frac{14}{129} = \frac{x}{100}$

$129x = 1400$

$x = 10.85\%$

10 140 is 97% of what number?

$\frac{140}{x} = \frac{97}{100}$

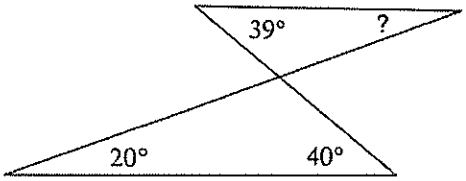
$97x = 1400$

$x = 144.33$

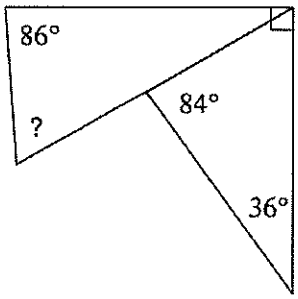
Angle Relationships

Find the missing angle(s).

1



2



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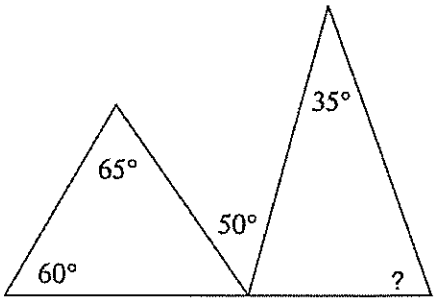

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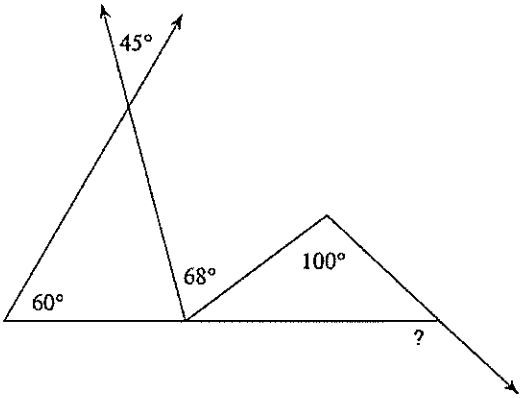
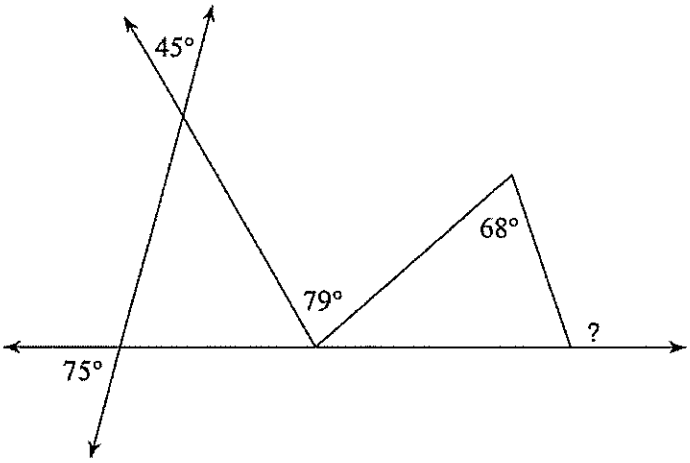


5



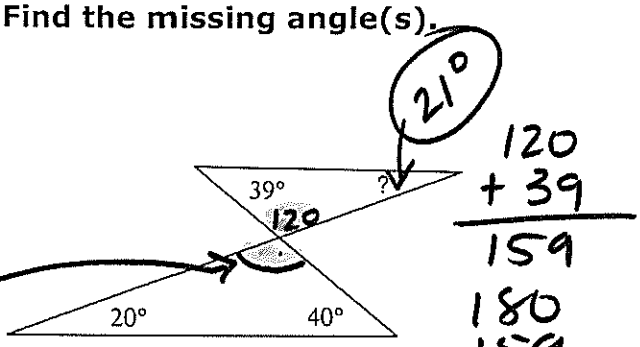
★ interior ∠'s of △ = 180°
★ vertical ∠'s are ≅.

★ Supplementary ∠'s = 180°

Angle Relationships

Find the missing angle(s).

1

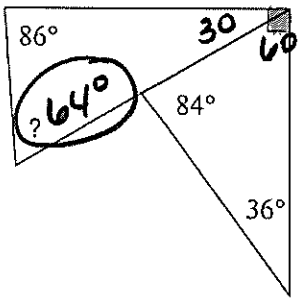


180 − 60 = 120

120 + 39 = 159

180 − 159 = 21

2



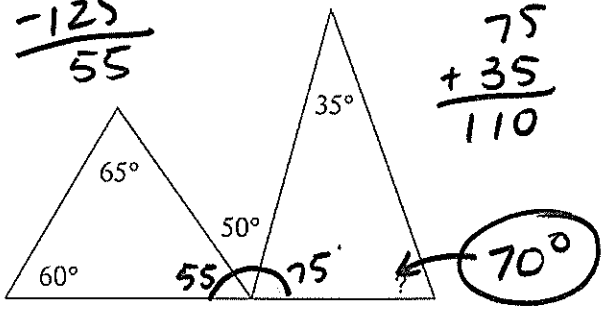
86 + 30 = 116

180 − 116 = 64

84 + 36 = 120

180 − 120 = 60

3

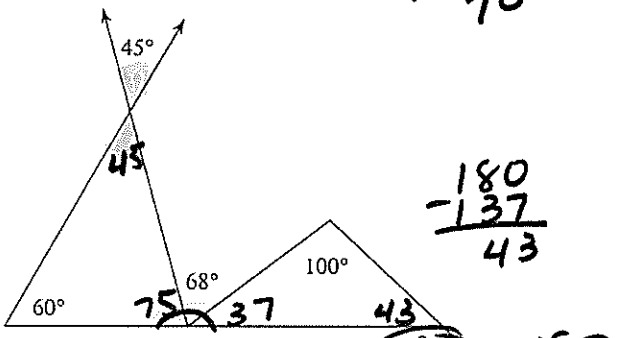


180 − 125 = 55

75 + 35 = 110

55 + 50 = 105

4



180 − 110 = 70

180 − 137 = 43

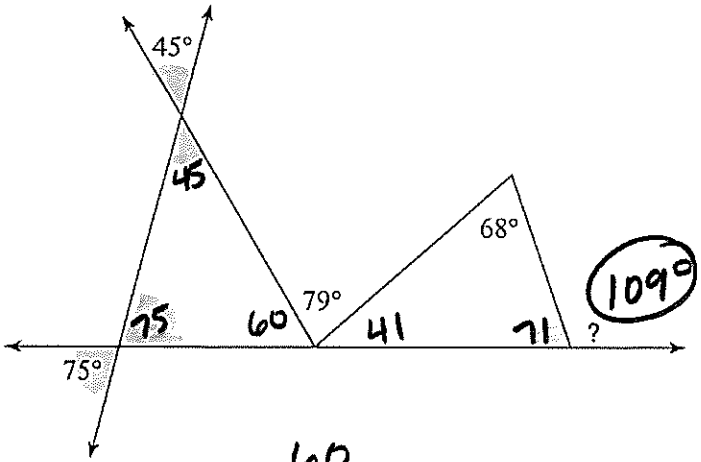
60 + 45 = 105

75 + 68 = 143

180 − 43 = 137

180 − 143 = 37

5



41 + 68 = 109

180 − 71 = 109

180 − 109 = 71

60 + 79 = 139

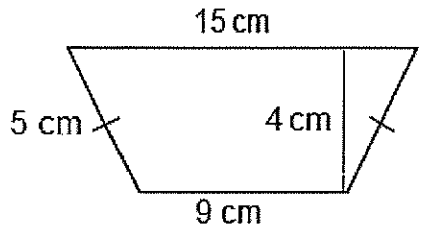
180 − 139 = 41

★ Complementary ∠'s = 90°

Area and Perimeter

Find the AREA and PERIMETER for each figure. Use 3.14 for π. Round to the nearest hundredth if necessary.

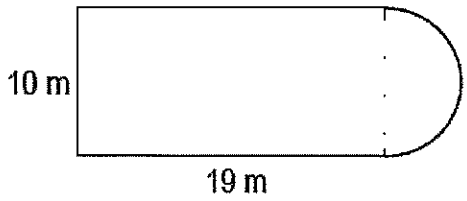
1



Area: _____

Perimeter: _____

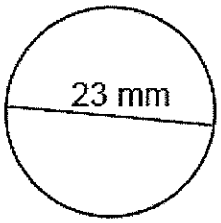
2



Area: _____

Perimeter: _____

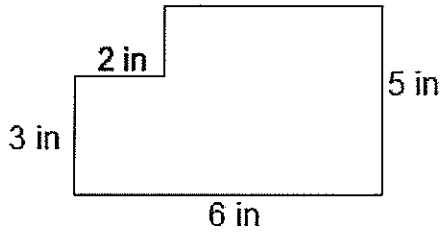
3



Area: _____

Circumference: _____

4

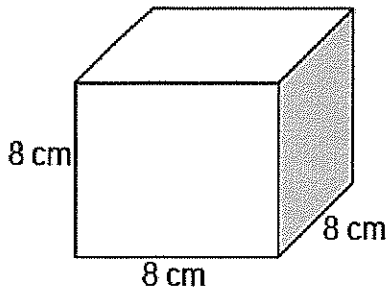


Area: _____

Perimeter: _____

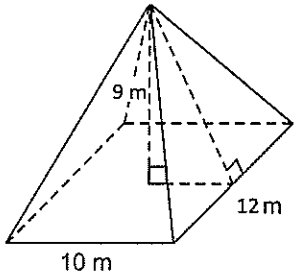
Find the volume of the figures.

5



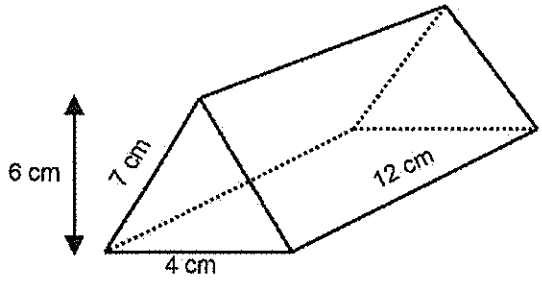
Volume: _____

6



Volume: _____

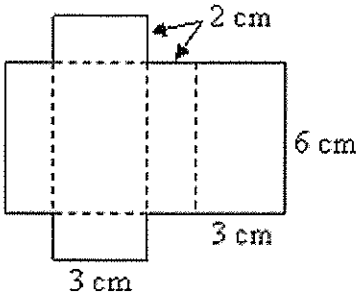
7



Volume: _____

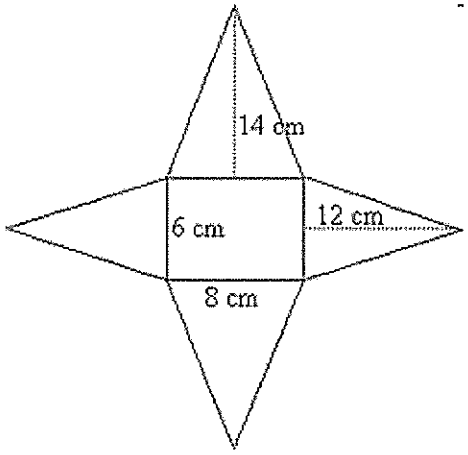
Find the surface area of the nets.

8



Total surface area: _____

9



Total surface area: _____

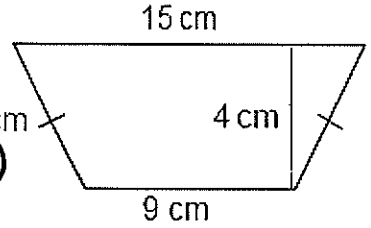
Area and Perimeter

Find the AREA and PERIMETER for each figure. Use 3.14 for π.

1

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

$\frac{1}{2}(15+9)(4)$

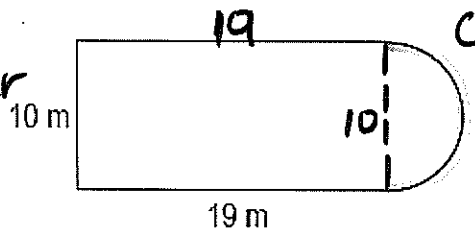


Area: 48 cm²

Perimeter: 34 cm

5+9+15+5=

2



Perimeter
19
10
19
57
205

$C=\pi d$
$=3.14(10)$
314
÷2 =157
semi-circle

Area: 229.25 m²

Perimeter: 205 m

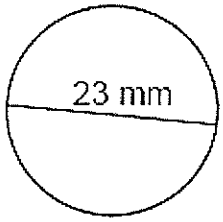
rect. area = $bh = 10(19)$
$= 190\ m^2$

semi-circle area = $\frac{\pi r^2}{2}$

$= \frac{3.14(5)^2}{2} = 39.25\ m^2$

39.25
+190
229.25

3



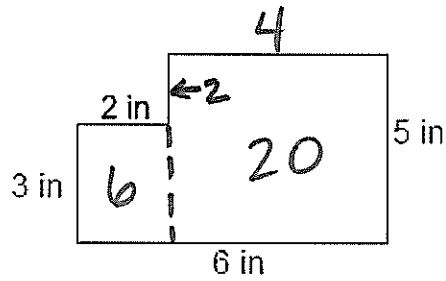
$A=\pi r^2$
$=3.14(11.5)^2$
$=415.27$

$C=\pi d$
$=3.14(23)$

Area: 415.27 mm²

Circumference: 72.22 mm

4



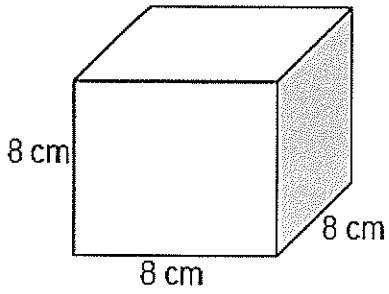
Area: 26 in²

Perimeter: 22 in

P = 2+4+5+6+3+2

Find the volume of the figures.

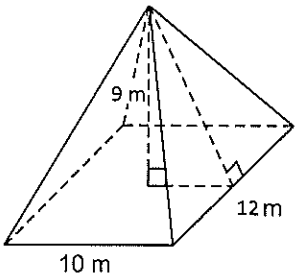
5



Volume: $512\ cm^3$

$lwh = 8 \cdot 8 \cdot 8 = 512$

6



Volume: $360\ m^3$

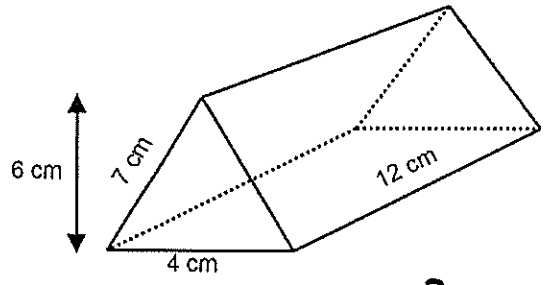
$$V = \frac{Bh}{3}$$

$$V = \frac{(lw)h}{3}$$

$$V = \frac{(10 \cdot 12)(9)}{3}$$

$$V = 360$$

7



Volume: $144\ cm^3$

$V = Bh$

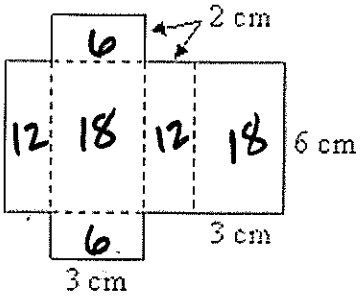
$V = (\frac{1}{2}bh)h$

$V = (\frac{1}{2} \cdot 4 \cdot 6)(12)$

$V = 144\ cm^3$

Find the surface area of the nets.

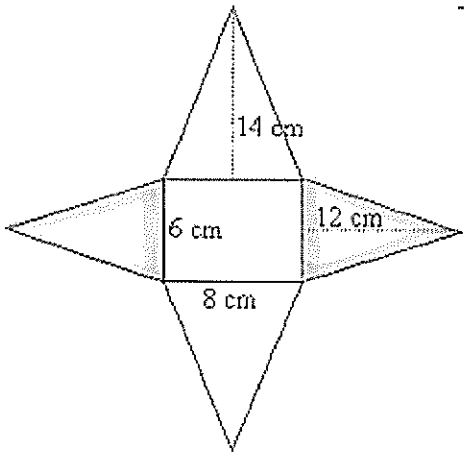
8



$2(6) + 2(12) + 2(18) = 72\ cm^2$

Total surface area: $72\ cm^2$

9



$\frac{1}{2}bh = \frac{1}{2} \cdot 6 \cdot 12 = 36$

$36 \times 2 = 72$ ← two triangles

$\frac{1}{2}bh = \frac{1}{2} \cdot 8 \cdot 14 = 56$

$56 \times 2 = 112$ ← two triangles

$bh = 6 \cdot 8 = 48$ ← rectangle

Total surface area: $232\ cm^2$

$$\begin{array}{r} 72 \\ 112 \\ +\ 48 \\ \hline 232 \end{array}$$

Name: _____

Pre AP Pre Algebra Summer Packet - one step equations

Do not use a calculator. Leave your answer as fraction if necessary.

1. $x + 18 = 32$

2. $h - 56 = 57$

3. $12 = r - 76$

4. $14m = 42$

5. $10c = 5$

6. $38 = 19j$

7. $w \div 12 = 9$

8. $14 + x = 18$

9. $\frac{p}{22} = 7$

10. $47 = x - 5$

11. $k + 6 = 76$

12. $2 = 6m$

13. $t - 8 = 14$

14. $\frac{h}{19} = 11$

15. $\frac{4}{x} = 32$

Name: _____

Pre AP Pre Algebra Summer Packet - one step equations

Do not use a calculator. Leave your answer as fraction if necessary.

1) $x + 18 = 32$
$-18 \quad -18$
$x = 14$

2) $h - 56 = 57$
$+56 \quad +56$
$h = 113$

3) $12 = r - 76$
$+76 \quad +76$
$88 = r$
$r = 88$

4) $\frac{14m}{14} = \frac{42}{14}$
$m = 3$

5) $\frac{10c}{10} = \frac{5}{10}$
$c = \frac{5}{10}$ $c = \frac{1}{2}$

6) $\frac{38}{19} = \frac{19j}{19}$
$2 = j$ $j = 2$

7) $w \div 12 = 9$
$\times 12 \quad \times 12$
$w = 108$

8) $14 + x = 18$
$-14 \quad -14$
$x = 4$

9) $\frac{p}{22} = 7$ (22)
$p = 154$

10) $47 = x - 5$
$+5 \quad +5$
$52 = x$ $x = 52$

11) $k + 6 = 76$
$-6 \quad -6$
$k = 70$

12) $\frac{2}{6} = \frac{6m}{6}$
$\frac{2}{6} = m$ $m = \frac{1}{3}$

13) $t - 8 = 14$
$+8 \quad +8$
$t = 22$

14) $\frac{h}{19} = 11$ (19)
$h = 209$

15) $\frac{4}{x} = 32$ x
$4 = 32x$
$\frac{4}{32} = \frac{32x}{32}$
$\frac{1}{8} = x$ $x = \frac{1}{8}$

Name: _____

Pre AP Summer packet - two step equations

Do not use a calculator. Leave your answer as a fraction if necessary.

1. $2x + 1 = 9$

2. $3w + 5 = 23$

3. $4t - 2 = 14$

4. $\frac{3}{8}n + 1 = 14$

5. $7k - 3 = 32$

6. $8x - 1 = 63$

7. $2x - 5 = 15$

8. $9 + 4b = 17$

9. $3y + \frac{2}{5} = -\frac{1}{5}$

10. $2 + \frac{1}{6}a = -4$

11. $2p + 14 = 0$

12. $-9 = 8x + 7$

13. $5d - 1 = -11$

14. $-4 = \frac{r}{20} - 5$

15. $2 + \frac{v}{4} = -2$

16. $-1 = \frac{5+x}{6}$

17. $\frac{n+5}{6} = -1$

18. $-9x - 13 = -103$

19. $8 + \frac{b}{-4} = 5$

20. $-9x - 13 = 103$

Name: _____

Pre AP Summer packet - two step equations

Do not use a calculator. Leave your answer as a fraction if necessary.

1. $2x + 1 = 9$
$-1 \quad -1$
$\frac{2x}{2} = \frac{8}{2}$
$x = 4$

2. $3w + 5 = 23$
$-5 \quad -5$
$\frac{3w}{3} = \frac{18}{3}$
$w = 6$

3. $4t - 2 = 14$
$+2 \quad +2$
$\frac{4t}{4} = \frac{16}{4}$
$t = 4$

4. $\frac{3}{8}n + 1 = 14$
$-1 \quad -1$
$\left(\frac{8}{3}\right)\frac{3}{8}n = 13\left(\frac{8}{3}\right)$
$n = \frac{104}{3}$

5. $7k - 3 = 32$
$+3 \quad +3$
$\frac{7k}{7} = \frac{35}{7}$
$k = 5$

6. $8x - 1 = 63$
$+1 \quad +1$
$\frac{8x}{8} = \frac{64}{8}$
$x = 8$

7. $2x - 5 = 15$
$+5 \quad +5$
$\frac{2x}{2} = \frac{20}{2}$
$x = 10$

8. $9 + 4b = 17$
$-9 \quad -9$
$\frac{4b}{4} = \frac{8}{4}$
$b = 2$

9. $3y + \frac{2}{5} = -\frac{1}{5}$
$-\frac{2}{5} \quad -\frac{2}{5}$
$\frac{1}{3} \cdot 3y = -\frac{3}{5} \cdot \frac{1}{3}$
$y = -\frac{3}{15} = -\frac{1}{5}$

10. $2 + \frac{1}{6}a = -4$
$-2 \quad -2$
$6 \cdot \frac{1}{6}a = -6 \cdot 6$
$a = -36$

11. $2p + 14 = 0$
$-14 \quad -14$
$\frac{2p}{2} = \frac{-14}{2}$
$p = -7$

12. $-9 = 8x + 7$
$-7 \quad -7$
$\frac{-16}{8} = \frac{8x}{8}$
$x = -2$

13. $5d - 1 = -11$
$+1 \quad +1$
$\frac{5d}{5} = \frac{-10}{5}$
$d = -2$

14. $-4 = \frac{r}{20} - 5$
$+5 \quad +5$
$20 \cdot 1 = \frac{r}{20} \cdot 20$
$r = 20$

15. $2 + \frac{v}{4} = -2$
$-2 \quad -2$
$4 \cdot \frac{v}{4} = -4 \cdot 4$
$v = -16$

16. $6(-1) = \frac{5+x}{6} \cdot 6$
$-6 = 5 + x$
$-5 \quad -5$
$x = -11$

17. $6\left(\frac{n+5}{6}\right) = (-1)6$
$n + 5 = -6$
$-5 \quad -5$
$n = -11$

18. $-9x - 13 = -103$
$+13 \quad +13$
$\frac{-9x}{-9} = \frac{-90}{-9}$
$x = 10$

19. $8 + \frac{b}{-4} = 5$
$-8 \quad -8$
$-4 \cdot \frac{b}{-4} = -3 \cdot -4$
$b = 12$

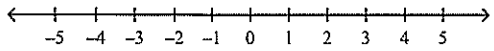
20. $-9x - 13 = 103$
$+13 \quad +13$
$\frac{-9x}{-9} = \frac{116}{-9}$
$x = \frac{-116}{9}$

Name: _____

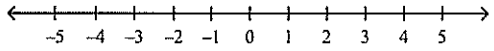
Pre AP Pre Algebra - summer packet - solving inequalities

Do not use a calculator.

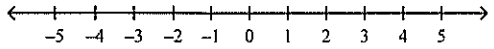
1 $n \geq -1$



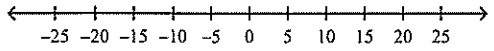
2 $6 + x < 5$



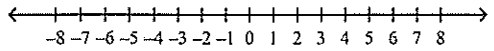
3 $2m \geq 6$



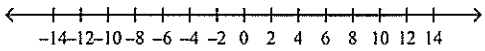
4 $-39 \leq x - 19$



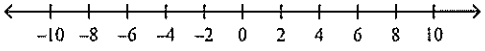
5 $n - 8 \leq -3$



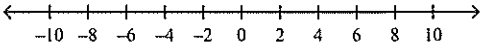
6 $5p + 3 > 38$



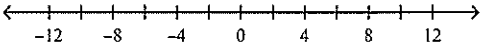
7 $\frac{k}{4} - 3 < -5$



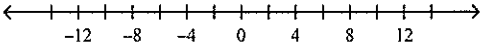
8 $2 - 5a \geq -48$



9 $17 > 5n + 7$



10 $\frac{x}{4} + 2 < 4$

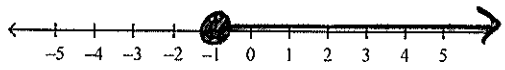


Name: _____

Pre AP Pre Algebra - summer packet - solving inequalities

Do not use a calculator.

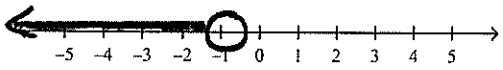
1 $n \geq -1$



2 $6 + x < 5$

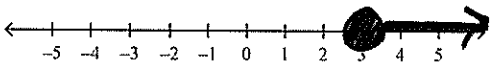
$-6 \quad -6$

$x < -1$



3 $\frac{2m}{2} \geq \frac{6}{2}$

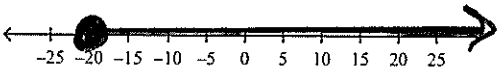
$m \geq 3$



4 $-39 \leq x - 19$

$+19$

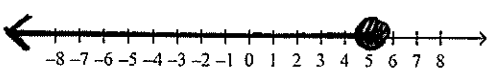
$-20 \leq x$ or $x \geq -20$



5 $n - 8 \leq -3$

$+8 \quad +8$

$n \leq 5$

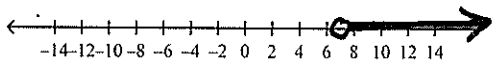


6 $5p + 3 > 38$

$-3 \quad -3$

$\frac{5p}{5} > \frac{35}{5}$

$p > 7$

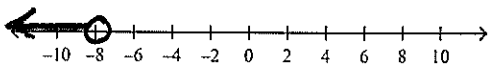


7 $\frac{k}{4} - 3 < -5$

$+3 \quad +3$

$4 \cdot \frac{k}{4} < -2 \cdot 4$

$k < -8$

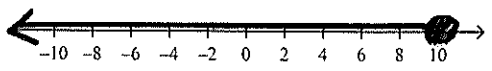


8 $2 - 5a \geq -48$

$-2 \quad -2$

$\frac{-5a}{-5} \geq \frac{-50}{-5}$

$a \leq 10$

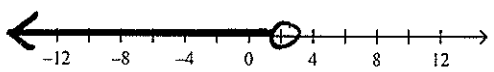


9 $17 > 5n + 7$

$-7 \quad -7$

$\frac{10}{5} > \frac{5n}{5}$

$n < 2$



10 $\frac{x}{4} + 2 < 4$

$-2 \quad -2$

$4 \cdot \frac{x}{4} < 2 \cdot 4$

$x < 8$