

## 6<sup>th</sup> Grade Math Entering Pre-Algebra: Summer Learning

Order the numbers from least to greatest.

1.  $|-3|, 4, -4, -|2|, -1$

2.  $\frac{21}{2}, -7.5, -\frac{36}{5}, 9.5$

Simplify the expression.

3.  $4 - (-3)$

4.  $-2 + 15$

5.  $-3(4)$

6.  $27 \div (-3)$

7.  $-\frac{1}{6} + \frac{7}{12}$

8.  $0.24 - 1.6$

9.  $2\frac{3}{5} \cdot \left(-\frac{4}{3}\right)$

10.  $-24 \div 3.2$

11. On an exam you get two points for each question answered correctly, zero points for each question left blank, and lose one point for each question answered incorrectly. What is your total score on the exam if you answer 22 questions correctly, leave 7 questions blank, and answer 5 questions incorrectly?

Solve.

12.  $x + 2\frac{4}{5} = 3\frac{1}{6}$

13.  $-0.4a + 1.2 = 3.6$

14. A pencil costs \$0.30 and a pen costs \$0.50. You buy 10 pencils and the total cost is \$7.50. How many pens did you buy?

15. A farmer builds a fence to enclose a rectangular pasture. He uses 160 feet of fence. Find the total area of the pasture if it is 50 feet long.

**Write the word sentence as an inequality.**

16. 3 less than a number  $t$  is at most 7.

17. A number  $m$  multiplied by 4 is greater than 12.

18. You and two friends are making a gift basket. You want to keep the cost below \$15 per person. Write and solve an inequality that represents the total cost of the gift basket.

**Solve the inequality. Graph the solution.**

19.  $a - 7 \leq -4$



20.  $-3m < 15$





21. If you spend at least \$50 (including shipping) at an online store, you receive a \$10 gift card. You want to purchase CDs that cost \$12 each. If shipping costs \$5, write and solve an inequality to find the number of CDs you must buy to receive the gift card.

22. The table shows the time in minutes  $m$  to download  $s$  songs. How long does it take to download one song?

<b>Minutes</b>	1	3	5
<b>Songs</b>	2	6	10

Tell whether the ratios form a proportion.

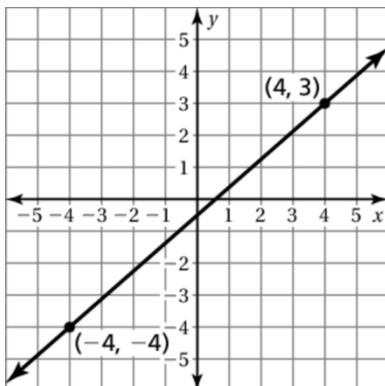
23.  $\frac{3}{8}, \frac{13}{40}$

24.  $\frac{7}{9}, \frac{28}{36}$

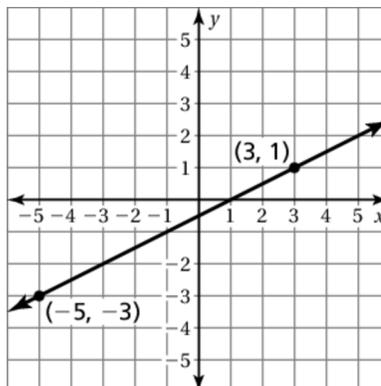
25. Solve the proportion  $\frac{7}{5} = \frac{21}{x}$ .

Find the slope of the line.

26.



27.



- 28.** If 30% of a number is 15, what is the number?
- 29.** A store sign reads “Take 75% off the original price when you take an additional 15% off the sale price, which is 60% off the original price.” Is the store’s sign accurate? Explain.
- 30.** You put \$1200 in an account that earns 3% simple interest. Find the total amount in the account after four years.

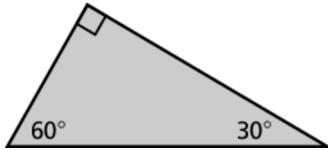
**Classify the angles as *complementary*, *supplementary*, or *neither*.**

**31.**  $23^\circ$ ,  $67^\circ$

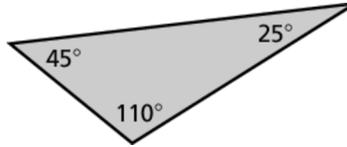
**32.**  $46^\circ$ ,  $144^\circ$

**Classify the triangle.**

33.

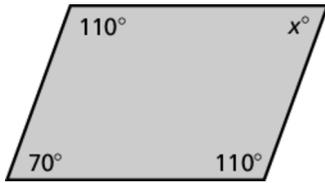


34.

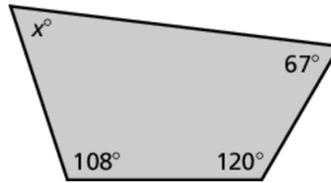


**Find the value of x.**

35.



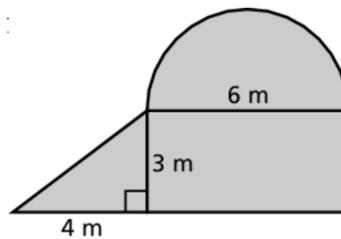
36.



37. A scale drawing has a scale of 3 in. : 1 ft. What is the scale factor?

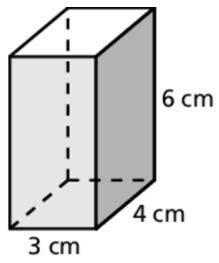
38. The diameter of a circle is 14 inches. Find the circumference and area. Use  $\frac{22}{7}$  for  $\pi$ .

39. Find the area of the figure. Use 3.14 :

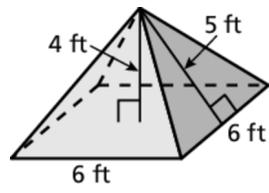


Find the volume and surface area of the solid.

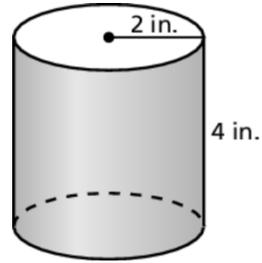
40.



41.



42. Find the surface area of the cylinder.  
Round your answer to the nearest tenth.



43. A manufacturer wants to make a box with a volume of 24 cubic feet.
- Sketch two possible designs for the box.
  - If the box is to be made out of wood that costs \$4 per square foot, which of your designs would be less expensive to produce? Explain.
44. The theoretical probability that you will try out for the school play is  $\frac{1}{10}$ . There are 22 students in your grade that try out for the school play. How many students are in your grade?
45. You flip two coins. What is the probability that you flip at least one head?

**You roll a number cube twice. Find the probability of the event.**

**46.** Rolling a 5 then a 3

**47.** Rolling an even then an odd

**48.** The probability that your ticket will be chosen in a drawing is 6%.  
There are 250 tickets in the drawing. How many tickets are yours?