1

Feeding Information for Boarded Pets

	Fed only dry food	Fed both wet and dry food	Total
Cats	5	11	16
Dogs	2	23	25
Total	7	34	41

$\frac{2}{25}$

The table above shows the kinds of foods that are fed to the cats and dogs currently boarded at a pet care facility. What fraction of the dogs are fed only dry food?

A) $\frac{2}{41}$

B) $\frac{2}{25}$

C) $\frac{7}{41}$

D) $\frac{2}{7}$

2

$(x^2 - 3) - (-3x^2 + 5)$ $x^2 - 3 + 3x^2 - 5$

Which of the following expressions is equivalent to the one above?

$4x^2 - 8$

A) $4x^2 - 8$

B) $4x^2 - 2$

C) $-2x^2 - 8$

D) $-2x^2 - 2$

3

A certain package requires 3 centimeters of tape to be closed securely. What is the maximum number of packages of this type that can be secured with 6 meters of tape? (1 meter = 100 cm)

A) 100
B) 150
C) 200
D) 300

$6m * \frac{100\ cm}{1\ m}$

÷3
600
= cm

4

A market researcher selected 200 people at random from a group of people who indicated that they liked a certain book. The 200 people were shown a movie based on the book and then asked whether they liked or disliked the movie. Of those surveyed, 95% said they disliked the movie. Which of the following inferences can appropriately be drawn from this survey result?

A) At least 95% of people who go see movies will dislike this movie.
B) At least 95% of people who read books will dislike this movie.
C) Most people who dislike this book will like this movie.
D) Most people who like this book will dislike this movie.

5

Which of the following ordered pairs (x, y) satisfies the inequality $5x - 3y < 4$?

I. $(1, 1)$

II. $(2, 5)$

III. $(3, 2)$

A) I only

B) II only

C) I and II only

D) I and III only

$5(3)-3(2)<4$

$15-6<4$ X

$5(1)-3(1)<4$

$5-3<4$

$2<4$ ✓

$5(2)-3(5)<4$

$10-15<4$

$-5<4$ ✓

6

In the equation $(ax + 3)^2 = 36$, a is a constant. If $x = -3$ is one solution to the equation, what is a possible value of a ?

A) -11

B) -5

C) -1

D) 0

$ax+3=\pm 6$

$-3a+3=\pm 6$

$-3a+3=6$

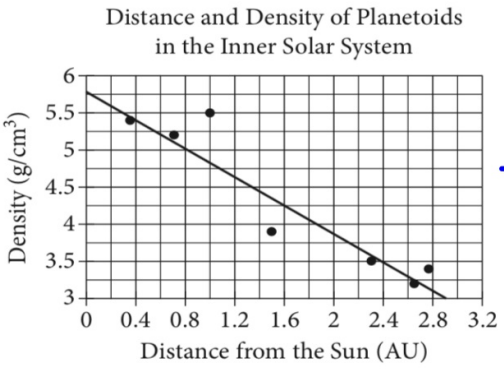
$-3a=3$

$a=-1$

$-3a+3=-6$

$a=-3$

Questions 7 and 8 refer to the following information.



The scatterplot above shows the densities of 7 planetoid in grams per cubic centimeter, with respect to their average distances from the Sun in astronomical units (AU). The line of best fit is also shown.

7

According to the scatterplot, which of the following statements is true about the relationship between a planetoid's average distance from the Sun and its density?

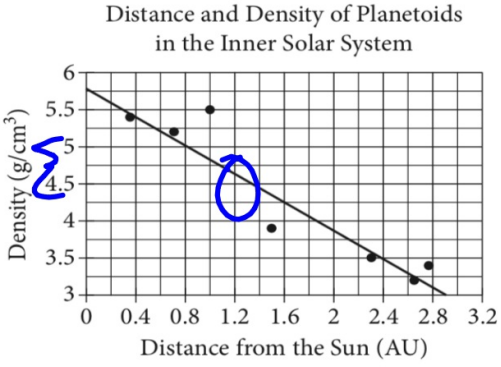
A) Planetoids that are more distant from the Sun tend to have lesser densities.

B) Planetoids that are more distant from the Sun tend to have greater densities.

C) The density of a planetoid that is twice as far from the Sun as another planetoid is half the density of that other planetoid.

D) The distance from a planetoid to the Sun is unrelated to its density.

Questions 7 and 8 refer to the following information.



The scatterplot above shows the densities of 7 planetoids, in grams per cubic centimeter, with respect to their average distances from the Sun in astronomical units (AU). The line of best fit is also shown.

8

An astronomer has discovered a new planetoid about 1.2 AU from the Sun. According to the line of best fit, which of the following best approximates the density of the planetoid, in grams per cubic centimeter?

A) 3.6

B) 4.1

C) 4.6

D) 5.5

9

$$9ax + 9b - 6 = 21$$

+6 +6

Based on the equation above, what is the value of $ax + b$?

$$\frac{9ax+9b=27}{9}$$

$$ax+b=3$$

A) 3

B) 6

C) 8

D) 12

10

Lani spent 15% of her 8-hour workday in meetings. How many minutes of her workday did she spend in meetings?

$8 * 60 = 480 \cdot .15$

A) 1.2

B) 15

C) 48

D) 72

11

A software company is selling a new game in a standard edition and a collector's edition. The box for the standard edition has a volume of 20 cubic inches, and the box for the collector's edition has a volume of 30 cubic inches. The company receives an order for 75 copies of the game, and the total volume of the order to be shipped is 1,870 cubic inches. Which of the following systems of equations can be used to determine the number of standard edition games, s, and collector's edition games, c, that were ordered?

A) $75 - s = c$
$20s + 30c = 1{,}870$

B) $75 - s = c$
$30s + 20c = 1{,}870$

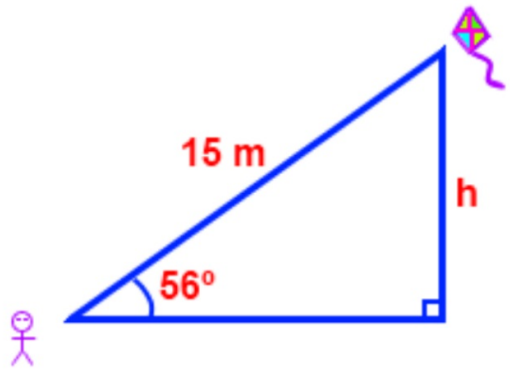
C) $s - c = 75$
$25(s + c) = 1{,}870$

D) $s - c = 75$
$30s + 20c = 1{,}870$

$S + C = 75$
$20S + 30C = 1870$
$C = 75 - S$

Angle of Elevation: Angle measured upward from the Horizontal.

1. You are flying a kite and have let out 15m of string. If you see the kite with an angle of elevation of 56 °, find the height of the kite to the nearest tenth of a meter.

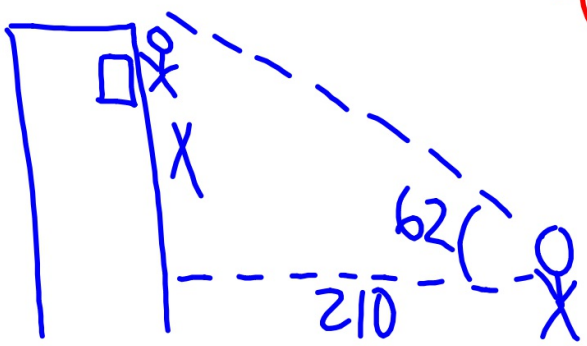


SOHCAHTOA

$\sin 56 = \frac{h}{15}$

$h = 12.4\text{m}$

2a. You are 210 feet from the front door of a tall building. You see a window washer on the outside of the building with an angle of elevation of 62 °. How high up on the building is the window washer? Round to the nearest whole foot.



$\tan 62 = \frac{X}{210}$

$X = 395\text{ft}$

2b. You are 210 feet from the front door of a tall building. You see a window washer on the outside of the building with an angle of elevation of 62°. How high up on the building is the window washer? Round to the nearest whole foot.

You see another window washer on the same building with and angle of elevation of 50°.

a) Is this other window washer higher or lower than the original one?

first Window Washer

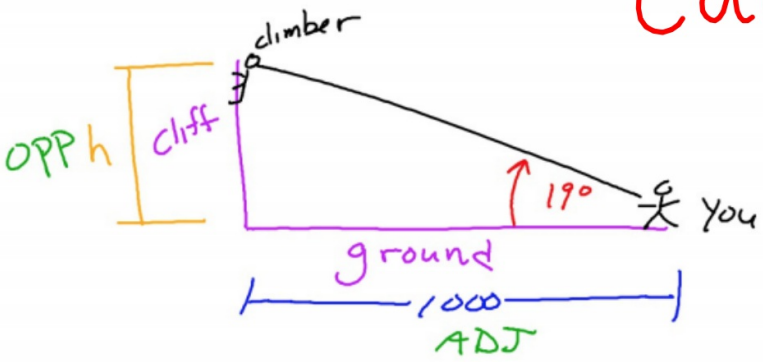
b) What distance separates the two window washers? Round to the nearest tenth of a foot.

$\tan 50 = \frac{x}{210}$

$x = 250$ ft

145 ft

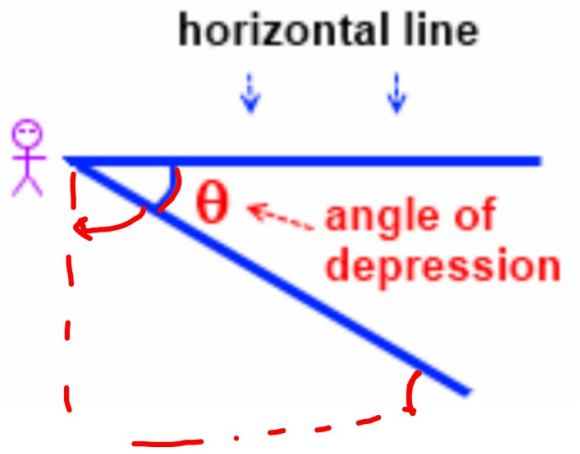
3. You are 1000 feet from the base of a cliff and see a rock climber high on the cliff with an angle of elevation of 19°. How high up on the cliff is the rock climber? Round to the nearest whole number.



$\tan 19 = \frac{h}{1000}$

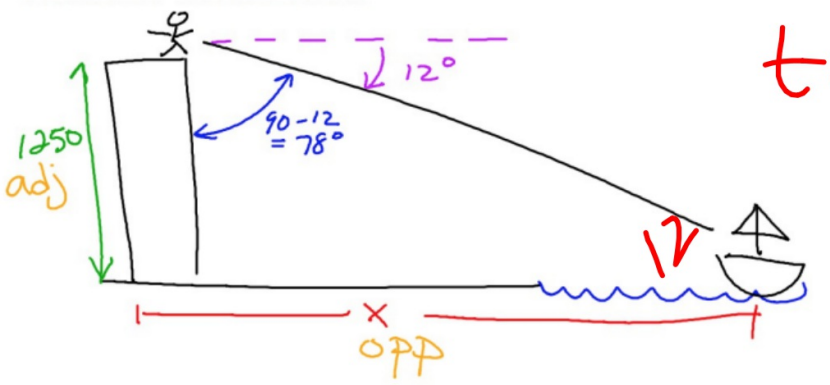
$h = 344$ ft

Angle of Depression: Angle measured downward from the Horizontal.



4. You are at the top of the Empire State Building in New York City, 1250 above the ground. You see a ship on the East River with an angle of depression of 12 °. How far away from the Empire State Building is the ship? Round to the nearest whole foot.

SOHCAHTOA



$\tan 12 = \frac{1250}{x}$

$x = 5881$

5. You are on the roof of a 30 foot tall building. You see your friend on the ground with an angle of depression of 35°. How far away from the building is your friend?

6. You are on the roof of a 150 foot tall building and see your car parked on the street. You know you parked your car 200 feet from the building. You see your car with what angle of depression? Round to the nearest tenth of a degree.

$\tan^{-1}\left(\frac{150}{200}\right)$

$= 36.9$

Hwk #18

DUE TOMORROW

Practice Sheet

Right Triangle Trigonometry and Story Problems

IXL #10 - R.1 & R.8 due tomorrow by 4pm!