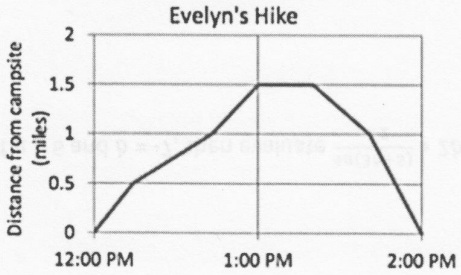
LENTZ & LENTZ SAT PREP MATH PROBLEMS

1



The graph above shows Evelyn's distance from her campsite during a 2-hour hike. She stopped for 20 minutes during her hike to have lunch. Based on the graph, which of the following is closest to the time she finished lunch and continued her hike?

A) 12:20 pm

B) 1:00 pm

C) 1:20 pm

D) 1:40 pm

2

If 3s = 15, what is the value of 6s + 3?

A) 5

B) 18

C) 30

D) 33

3

A construction company estimates the price of a job, in dollars, using the expression 50 + 15nh, where n is the number of workers and h is the total number of hours the job will take using n workers. Which of the following is the best interpretation of the number 15 in the expression?

A) The company charges $15 per hour for each worker.
B) Each worker works 15 hours a day.
C) A minimum of 15 workers will work on each job.
D) The price of every job increases by $15 every hour.

4

Five hundred dollars was invested at a yearly simple interest of w percent. If at the end of the year the value of the investment was $ 580, what is the value of w?

A) 80
B) 16
C) 12
D) 8

5

If the average (arithmetic mean) of -5 and x is 1, what is the value of x ?

A) -3
B) -2
C) 6
D) 7

6

$$x + y = 0$$
$$3x - 4y = 21$$

Which of the following ordered pairs (x, y) satisfies the system of equations above?

A) (3, -4)
B) (3, -3)
C) (-3, 3)
D) (-4, -4)

7

It takes how many fewer minutes to travel 20 miles at 60 mph than 40 mph?

A) 10
B) 8
C) 6
D) 4

8

In a video game, each player starts the game with P points and loses 3 points each time a task is not completed. If a player who gains no additional points and fails to complete 50 tasks has a score of 500 points, what is the value of P?

9

Which of the following is equal to $a^{\frac{3}{2}}$?

A) $\sqrt{a^{\frac{1}{3}}}$

B) $\sqrt{a^3}$

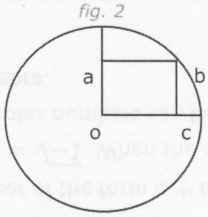
C) $3\sqrt{a^{\frac{1}{2}}}$

D) $3\sqrt{a^2}$

10

In figure 2, O is the center of the circle and B is a point on the circle. In rectangle OABC, if OA=5 and OC =6, what is the area of the circle?

fig. 2



A) 11 π

B) 25 π

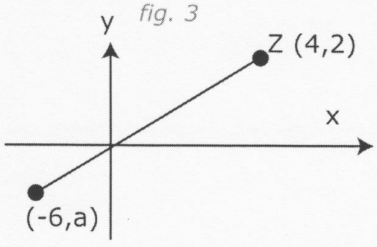
C) 36 π

D) 61 π

11

In figure 3, if the slope of the line Z is $\frac{3}{10}$, what is the value of a?

fig. 3



A) –3

B) –2

C) –1

D) 1

12

.06 divided by $\frac{6}{.5}$ =

A) .005

B) .05

C) .5

D) 5

13

The population of crickets in a marsh is estimated over the course of twenty weeks, as shown in the table.

Time (weeks)	Population
0	10
5	100
10	1,000
15	10,000
20	100,000

Which of the following best describes the relationship between time and the estimated population of crickets during the twenty weeks?

A) increasing linear

B) decreasing linear

C) exponential growth

D) exponential decay

14

Estimate: $\frac{591X5017}{992X305}$ =

A) 5

B) 8

C) 4.04

D) 10

15

A company pays its salesmen a commission of 5% on all sales up to and including $600 and then 10% on all sales above $600. If one of the salesmen for the company made $100 in commissions, his total sales were:

A) $1600

B) 41400

C) $1300

D) $1000

16

If a>b, then which one of the following must be true?

A) a-b < 1

B) ab > b

C) a + 1 > b

D) a + b > 3b

17

$$\frac{8-i}{3-2i}$$

If the expression above is rewritten in the form $a + bi$, where a and b are real numbers, what is the value of a? (Note: $i = \sqrt{-1}$)

A) 2
B) $\frac{8}{3}$
C) 3
D) $\frac{11}{3}$

18

	Under 30	30 or Older	Total
Male	11	3	14
Female	7	4	11
Total	18	7	25

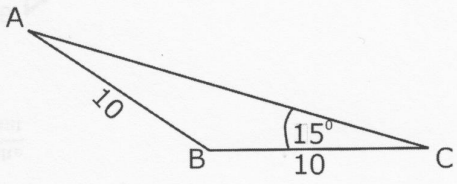
The table above shows the distribution of age and gender for 25 people who entered a contest. If the contest winner will be selected at random, what is the probability that the winner will be either a female under 30 or a male age 30 or older?

A) 3/25
B) 10/25
C) 11/25
D) 15/25

19

The area of ΔABC is:

A) 25
B) $25\sqrt{2}$
C) $25\sqrt{3}$
D) 50



20

In the xy—plane, the point (4,4) lies on the graph of the function f(x) = 2x2 — bx + 12. What is the value of b?