

Test 2
Dusty Wilson
Math 085

Name: key

Why are numbers beautiful? It's like asking why is Beethoven's Ninth Symphony beautiful. If you don't see why, someone can't tell you. I know numbers are beautiful. If they aren't beautiful, nothing is.

Paul Erdős (1913 - 1996)
Hungarian mathematician

No Calculators

No work = no credit.

multiply

↓
 $0 \cdot 7 = \underline{0}$

$\frac{0}{7} = \underline{0}$

$-7^2 = \underline{-49}$

Warm-ups (1 pt each)

3

1.) (2 pts) In a fruit and nut mix, the ratio of the number of fruits to the number of nuts is 5 to 9. Circle all the choices below that will keep the mix at this same ratio.

- a.) Add 5 fruits and 9 nuts to the mix
- b.) Add 5 fruits and 5 nuts to the mix
- c.) Add 9 fruit and 5 nuts to the mix
- d.) Add 10 fruits and 18 nuts to the mix

2

2.) (2 pts) Solve $\frac{20}{x} = \frac{5}{11}$

$X = \frac{20 \times 11}{5} = 44$

X = 44

4

3.) (2 pts) Nancy drove 360 miles in 8 hours. Find the rate that she drove in miles per hour.

$$\begin{array}{r}
 45 \\
 8 \overline{) 360} \\
 \underline{-32} \\
 40
 \end{array}$$

45 mph

4.) (2 pts) Circle the expression(s) below that are equal to 72%

- a.) 7.2
- b.) 0.72
- c.) $\frac{72}{100}$
- d.) $\frac{72}{1000}$
- e.) $\frac{18}{25}$

4

5.) (2 pts) Circle the expression(s) that has(have) a positive value:

- a.) $3.1 \times 15 \times (-2.5)$
- b.) $-6 \times (-4.2) \times 24$
- c.) $-2.4 \times (-32) \times (-5.5)$

6.) (2 pts) Write 243% as a decimal number

2.43

4

7.) (2 pts) Write 0.513 as a percent

51.3%

17

6/0

61

8.) (2 pts) After hiking 6 miles, Sharon found that she was $\frac{3}{7}$ of the way along the trail. Use this proportion to find x ; the length of the trail in miles: $\frac{6}{x} = \frac{3}{7}$

$$42 = 3x$$

$$\frac{42}{3} = \frac{3x}{3}$$

$$14 = x$$

Solution: 14 miles

9.) (2 pts) Circle the ratio(s) below that forms a proportion with the ratio: $\frac{14}{18}$

a.) $\frac{13}{17}$

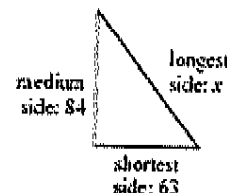
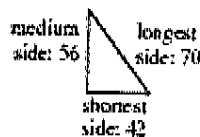
b.) $\frac{21}{27}$

c.) $\frac{9}{7}$

d.) $\frac{8}{10}$

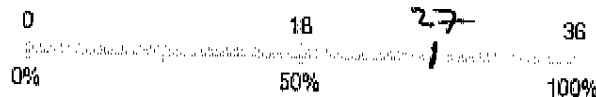
10.) (2 pts) The two triangles shown below are similar triangles. Use a proportion to solve for the length of the missing side x .

$$\frac{x}{70} = \frac{84}{56} = \frac{12}{8} = \frac{3}{2} \Rightarrow x = 70 \cdot \frac{3}{2} = 105$$



Solution: $x = 105$

11.) (2 pts) The number line given is divided into four parts of equal length. Use the number line to answer this question: 27 is what percent of 36?



Solution: 75%

12.) (2 pts) Circle the symbol(s) that could replace the question mark "?" to make $-7 ? -9$ a true statement.

$-7 > -9$ $-7 < -9$ $-7 \leq -9$ $-7 = -9$ $-7 \neq -9$

13.) (2 pts) A and B are two points on the number line, and $A < B$. If $A = -1$ and the distance between the two points is 3, what is the coordinate of B ?

$B = 2$

14.) (2 pts) On an algebra test, Mario answered 70% of the questions correctly. If the test contained 50 questions, how many did he get right?

$.7(50)$

35 right

15.) (2 pts) 16 is what percent of 25?

$$\begin{array}{r} 64 \\ 25 \overline{)160} \\ \underline{-156} \\ 40 \end{array}$$

64%

16.) (2 pts) When Cindy and Tony arrive at the airport, they found that their luggage weighted 45 pounds. This is 25% more than the acceptable weight limit. What is the weight limit for luggage?

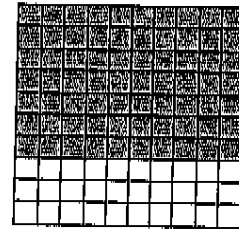
$$\frac{45}{125} = \frac{x}{100} \Rightarrow x = \frac{100}{125} \cdot 45 = \frac{4}{5} \cdot 45 = 4(9)$$

Solution: 36/35

17.) (2 pts) When Barbara's checking account balance fell below zero to -\$23.50, the bank charged her a penalty of \$12. Find Barbara's balance after the penalty.

-35.50

18.) (2 pts) For the 100-square grids given, find the percent that is shaded



70%

19.) (2 pts) A new company has hired 10 employees. This is 25% of the number of employees it expect to have at the end of next year. How many employees does it expect to have next year?

$$\frac{10}{25} = \frac{x}{100} \Rightarrow x = \frac{100}{25} \cdot 10$$

Solution: 40 employees

20.) (2 pts) Last year, the original price of a popular sweater was \$40. This year the price is \$50. Find the percent increase in price.

$$\begin{array}{r} 25 \\ 40 \overline{)100} \\ \underline{-80} \\ 200 \end{array}$$

Solution: 25% increase

21.) (2 pts) $\frac{3}{4} + \left(-\frac{2}{3}\right) + \left(-\frac{1}{4}\right) + \frac{11}{12}$

$\frac{3}{4} - \frac{2}{3} - \frac{1}{4} + \frac{11}{12}$

$\frac{9}{12} - \frac{8}{12} - \frac{3}{12} + \frac{11}{12}$

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

22.) (2 pts) On a cold morning, the temperature at sunrise was -25°F . By noon, the temperature had increased to 15°F . How much did the temperature increase from sunrise to noon?

40°F

23.) (2 pts) Circle the expression(s) below that is(are) the same as $345 - (-2589)$:

a.) $-345 + 2589$

b.) $345 + 2589$

c.) $2589 - 345$

d.) $345 - 2589$

24.) (2 pts) Find $8 + (-5) \times [(-10) + 24 \div 4]$

$= 8 + (-5) \times [-10 + 6]$

$= 8 + (-5) \times (-4)$

$= 8 + 20$

$= 28$

28

25.) (2 pts) Do each given operation

a.) $(-7) \times (9) = -63$

b.) $(-9) \times (-7) = 63$

a.) $15 \div (-3) = -5$

b.) $(-24) \div (-6) = 4$

26.) (2 pts) Circle the true statement(s)

a.) $3 > -4$

b.) $-5 > -7$

c.) $2 < 2$

d.) $0 \geq 3$

e.) $-6 \leq -6$

f.) $-1 \geq -1$

27.) (2 pts) Fill in the blanks to illustrate the distributive property:

$11 \times [25 + (-8)] = 11 \times 25 + 11 \times (-8)$

28.) (2 pts) Solve for x: $13x = -39$

$x = -3$

Solution: -84.6

29.) (2 pts) Find $-37.9 - (46.7)$

$\begin{array}{r} 146.7 \\ 37.9 \\ \hline 184.6 \end{array}$