

1. If $n=4$, what does $(3n-2)(5-n)$ equal? Show your work.

2pts

plug in $(3 \times 4 - 2)(5 - 4)$ then parentheses
 $(12 - 2)(1)$
 $10(1)$
 (10)

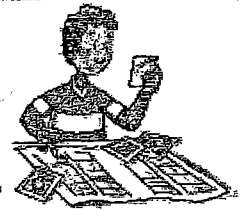
2. The photos for the sports section of the newspaper have arrived! Each photo measures 2 by 3 inches and Samuel needs to lay out a page that requires him to enlarge and reduce them in several ways. Explain which number(s) from the list below Samuel should multiply each side length by to get each of the desired results. Explain your reasoning in each case.

$$\frac{10}{10}, \frac{8}{7}, \frac{8}{9}, \frac{1}{10}, \frac{8}{8}, \frac{10}{3}$$

1pt each

- a. To make the photo much larger. $\frac{10}{3} = 3\frac{1}{3}$ much bigger than 1
- b. To make the photo slightly larger. $\frac{8}{7} \rightarrow$ slightly bigger than 1
- c. To make the photo much smaller. $\rightarrow \frac{1}{10}$ close to zero
- d. To make the photo slightly smaller. $\frac{8}{9}$ close to 1
- e. To keep the photo the same size.

$$\frac{10}{10} \text{ or } \frac{8}{8} \text{ Equal to } 1$$



3. Multiply the following. Show your work.

a. $(\frac{1}{2})(\frac{3}{4}) =$

$$\frac{1}{2} \times \frac{3}{4} = \left(\frac{3}{8}\right)$$

b. $4(2\frac{1}{4})$

$$4 \cdot 2\frac{1}{4} = \frac{14}{1} \times \frac{9}{4} = \frac{9}{1} = (9)$$

c. $2.5(1.3)$

$$\begin{array}{r} 2.5 \\ \times 1.3 \\ \hline 75 \\ 25 \\ \hline 3.25 \end{array}$$

d. $3(4\frac{1}{6})$

$$3 \cdot 4\frac{1}{6} = \frac{3}{1} \cdot \frac{25}{2} = \frac{25}{2} = (12\frac{1}{2})$$

4. Complete each Representations of a Portion Web below.

3pts each

a. **fraction** $\frac{72}{100} \div \left[\frac{2}{2}\right] = \frac{36}{50} \div \left[\frac{2}{2}\right] = \frac{18}{25}$

words or pictures

decimal .72

percent 72%

Seventy-two hundredths

b. **fraction** $\frac{1}{8}$

words or pictures

decimal .125

percent 12.5%

125

$$\begin{array}{r} .125 \\ 8 \overline{) 1.000} \\ \underline{8} \\ 20 \\ \underline{16} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

c. **fraction** $\frac{45}{100} \div \left[\frac{5}{5}\right] = \frac{9}{20}$ one hundred twenty-five thousandths.

words or pictures

decimal 0.45

percent 45%

Forty-five hundredths

d. **fraction** $\frac{18}{1000} \div \left[\frac{2}{2}\right] = \frac{9}{500} \div \left[\frac{5}{5}\right] = \frac{1.8}{100}$

words or pictures eighteen thousandths

decimal .018

percent 1.8%

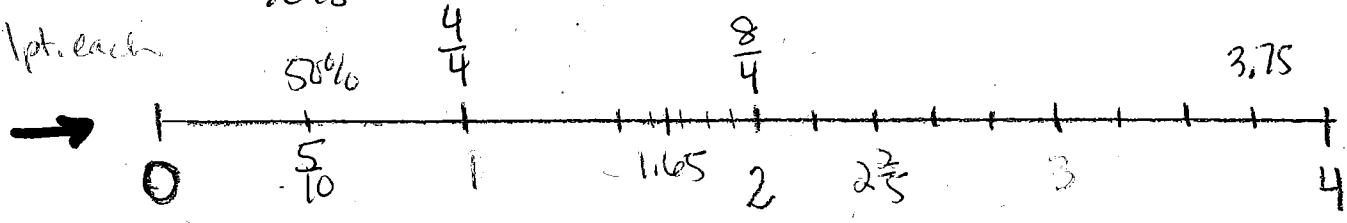
1.8

$$\begin{array}{r} 1.8 \\ 5 \overline{) 9.0} \\ \underline{5} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

or $\frac{9}{5} = \frac{14}{5}$

$\frac{18}{10}$

1pt. each



Put these ↓ #1s on the number line.

50%, $\frac{8}{4} = 2$, $\frac{5}{10} = \frac{1}{2}$, 3.75, $\frac{12}{5} = \frac{4}{4}$, 1.65 estimated

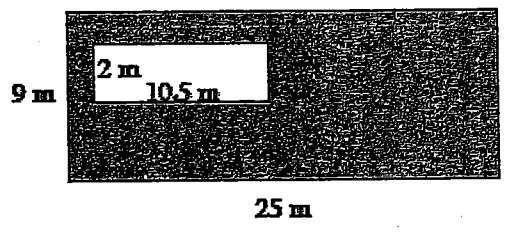
1pt each

5-79 Challenge

5. How can rectangles help you find the areas of the irregular shapes below? Talk with your team or partner about what rectangles you see in the shapes and how the areas of those rectangles can help you find the total area of each larger, irregular shape. All angles are right angles.

a. Find the shaded area.

3 pts



Dark Area = $L \times W$

$A = 25 \times 9$

$A = 225$

Light Area = $L \times W$

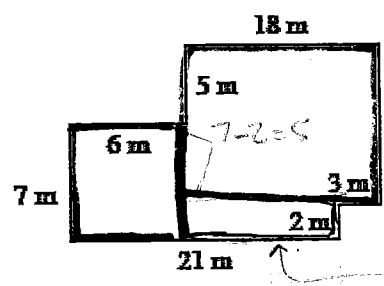
$A = 10.5 \times 2$

$A = 21.0$

Difference

$$\begin{array}{r} 225 \\ - 21 \\ \hline 204 \text{ sq meters} \end{array}$$

4 pts



$A = L \times W$

left $7 \times 6 = 42$

top $18 \times 10 = 180$ ← tricky

bottom $15 \times 2 = 30$ ← tricky

$$\begin{array}{r} 180 \\ 30 \\ 42 \\ \hline 252 \text{ m}^2 \end{array}$$

b.

$18 - 3 = 15$

5-89

6. Additional Challenge: On graph paper, graph $\triangle ABC$ if A is at $(-2, -3)$, B is at $(-2, 5)$, and C is at $(3, 0)$.

1 pt

2 pt

2 pt

4 pt

2 pt

a. What is the length of the base of $\triangle ABC$? Label side \underline{AB} with its length in grid units.

8 units

b. What is the height of $\triangle ABC$? Draw this length on your graph and label it.

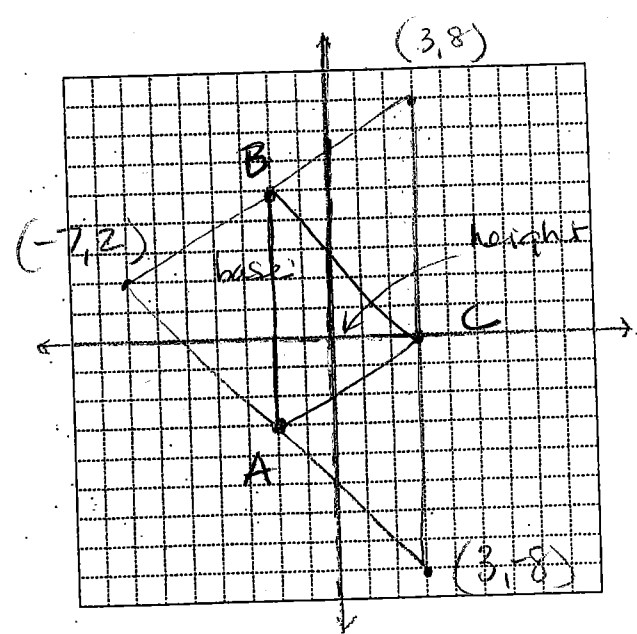
5 units

c. What is the area of $\triangle ABC$? Show how you got your answer.

d. If you formed a parallelogram with the triangle on your graph using a copy of $\triangle ABC$, where would the fourth vertex be? Is there more than one possible answer?

c) $A = b \cdot h \div 2$
 $A = 8 \cdot 5 \div 2$
 $A = 20 \text{ sq units}$

- d) $(3, 8)$
 $(3, -8)$
 $(-7, 2)$
 possible answers



Name _____ Period _____

- 5-3. For each product below, choose the diagram below that might be useful. Complete it to find the product.

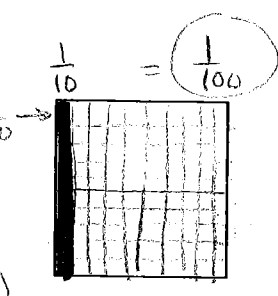
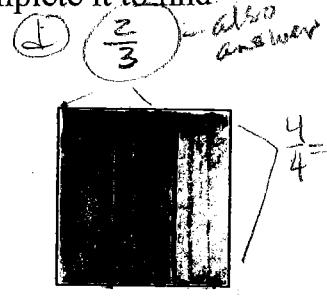
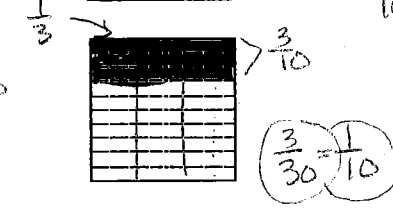
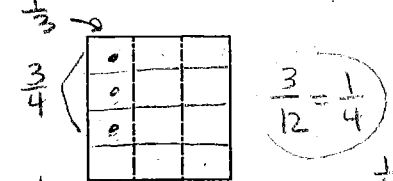
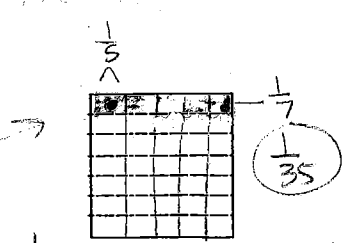
4pt a. $\frac{3}{4} \cdot \frac{1}{3} = \frac{3}{12} = \frac{1}{4}$

4pt b. $\frac{1}{5} \cdot \frac{1}{7} = \frac{1}{35}$

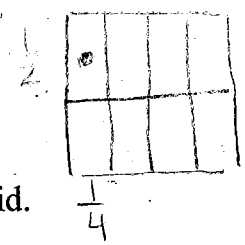
4pt c. $\frac{1}{3} \cdot \frac{3}{10} = \frac{3}{30} = \frac{1}{10}$

4pt d. $\frac{4}{4} \cdot \frac{2}{3} = \frac{8}{12} = \frac{4}{4} = \frac{2}{3}$

4pt e. $\frac{1}{10} \cdot \frac{1}{10} = \frac{1}{100}$



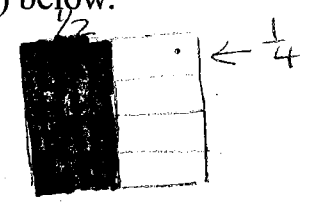
- 5-11. Grace and William were wondering if one half of a quarter would be the same as one quarter of a half. "But half of something is 50% and a quarter is the same as 25%, so if that's true, then 25% of 50% should be the same as 50% of 25%. Something seems wrong with that to me," Grace said.



- Investigate Grace and William's question by completing parts (a) through (c) below.

2pt a. Draw a picture that shows one half of one fourth.

2pt b. Draw a picture that shows one fourth of one half.



c. Write a note to Grace and William explaining how these two values compare and why the result makes sense.

The pictures are the same. Commutative Property showing $\frac{1}{2}$ order doesn't matter with + and x.

- 5-22. Additional Challenge: Calculate each of the following parts of parts.

2pt a. $\frac{2}{3}$ of 70% $\frac{2}{3} \times \frac{70}{100} = \frac{140}{150} = \frac{14}{15}$

2pt b. $3\frac{1}{5} \cdot \frac{2}{3} = \frac{16}{5} \cdot \frac{2}{3} = \frac{32}{15} = 2\frac{2}{15}$