- Get out your agenda and write down tonight's HW
- Get out last night's HW for HW Check

Box 3: exponents and roots #3
Box 4: exponents and roots #11

HW Answers

Exponents and Roots HW Answers

1. $\sqrt{9} =$ 3 because $3 \cdot 3 = 9$
2. $\sqrt{225} =$ 15 because $15 \cdot 15 = 225$
3. $\sqrt{484} =$ 22 because $22 \cdot 22 = 484$
4. $\sqrt{196} =$ 14 because $14 \cdot 14 = 196$
5. $3^2 =$ (3)(3) = 9, so 3 is a square root of 9.
6. $8^2 =$ (8)(8) = 64, so 8 is a square root of 64.
7. $13^2 =$ (13)(13) = 169, so 13 is a square root of 169.
8. What is the radicand of $\sqrt{81}$? 81 (under symbol)
9. Name 3 perfect squares. 4, 9, 16

answers may vary

10. Which set contains all irrational numbers?

A. $\sqrt{3}, \pi, 4\sqrt{5}$

B. $\frac{5}{9}, \sqrt{3}, 0.\overline{3}$

C. $0, \frac{3}{4}, 1.914$

D. $\sqrt{\frac{1}{2}}, 2\sqrt{5}, \sqrt{25}$ 5

11. Which number below is an example of a natural number?

counting number

A. -2

B. $\frac{2}{5}$

C. 3

12. Which phrase does not describe a rationa

A. integer number

B. repeating decimal

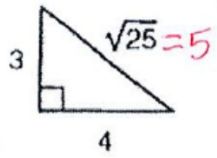
C. terminating decimal

D. non-repeating, non-terminating decim

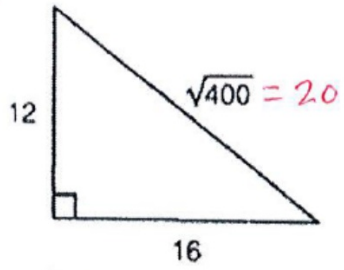
this is irrational

13. Which triangle has an irrational number as one of its side lengths?

A.



B.



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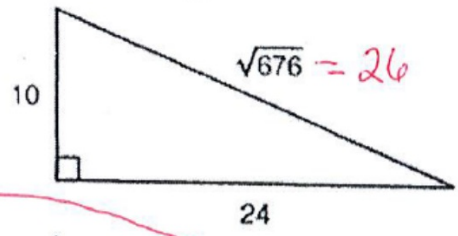
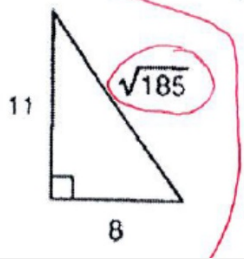
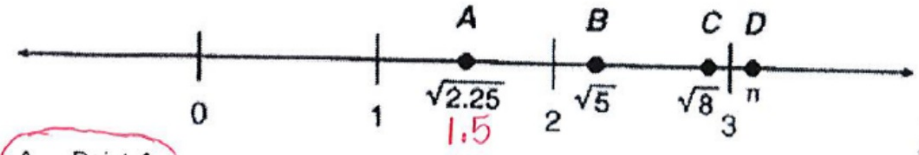


D.



14. Which point on the number line represents a rational number?



A. Point *A*
B. Point *B*
C. Point *C*
D. Point *D*

15. Terri is playing a math card game and has dealt each player four math cards.

Lisa: $2, \sqrt{2}, -5, \frac{1}{2}$
Ben: $0.\overline{435}, 0.5, \sqrt{25}, 0$ end or repeat
Kari: $\pi, 2, 6, -2$
Terri: $\sqrt{200}, \pi, \sqrt{50}, 1.43256744376665\ldots$

Which person's hand contains all rational numbers?

A. Lisa
B. Ben
C. Kari
D. Terri

Order of Operations and Evaluating Expressions

To simplify expressions we follow the order of operations

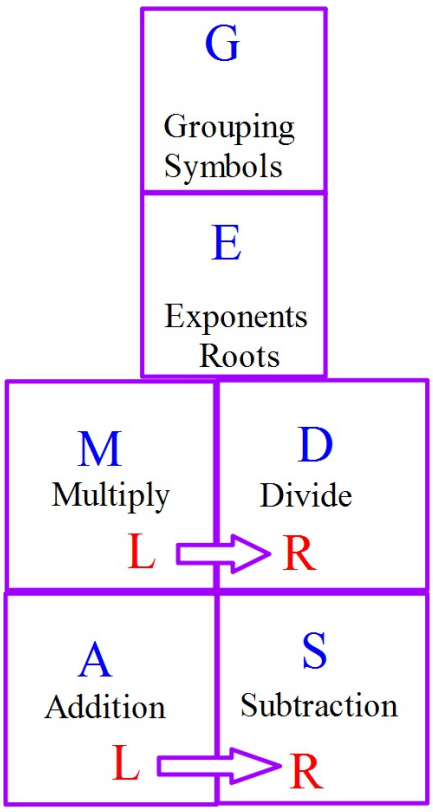
Order of Operations

1) Evaluate the Grouping Symbols
(parentheses, braces, brackets, absolute value and fraction bar)

2) Evaluate all powers (exponents and roots)

3) Do all multiplication and/or division as they appear from left to right

4) Do all addition and/or subtraction as they appear from left to right



Ex. 1) $12 \div 3 \cdot 5 - 4^2$

$12 \div 3 \cdot 5 - 16$

$4 \cdot 5 - 16$

$20 - 16$

4

Ex. 2) $4(1 + 5)^2 \div 8$

$4(6)^2 \div 8$

$4(36) \div 8$

$144 \div 8$

18

evaluate - to substitute a given value into an expression and simplify

Ex. 3) Evaluate $\frac{2}{3}[\,8(a-b)^2 + 3b]$ when a = 5 and b = 2

$$\frac{2}{3}[8(5-2)^2 + 3(2)]$$

$$\frac{2}{3}[8(3)^2 + 3(2)]$$

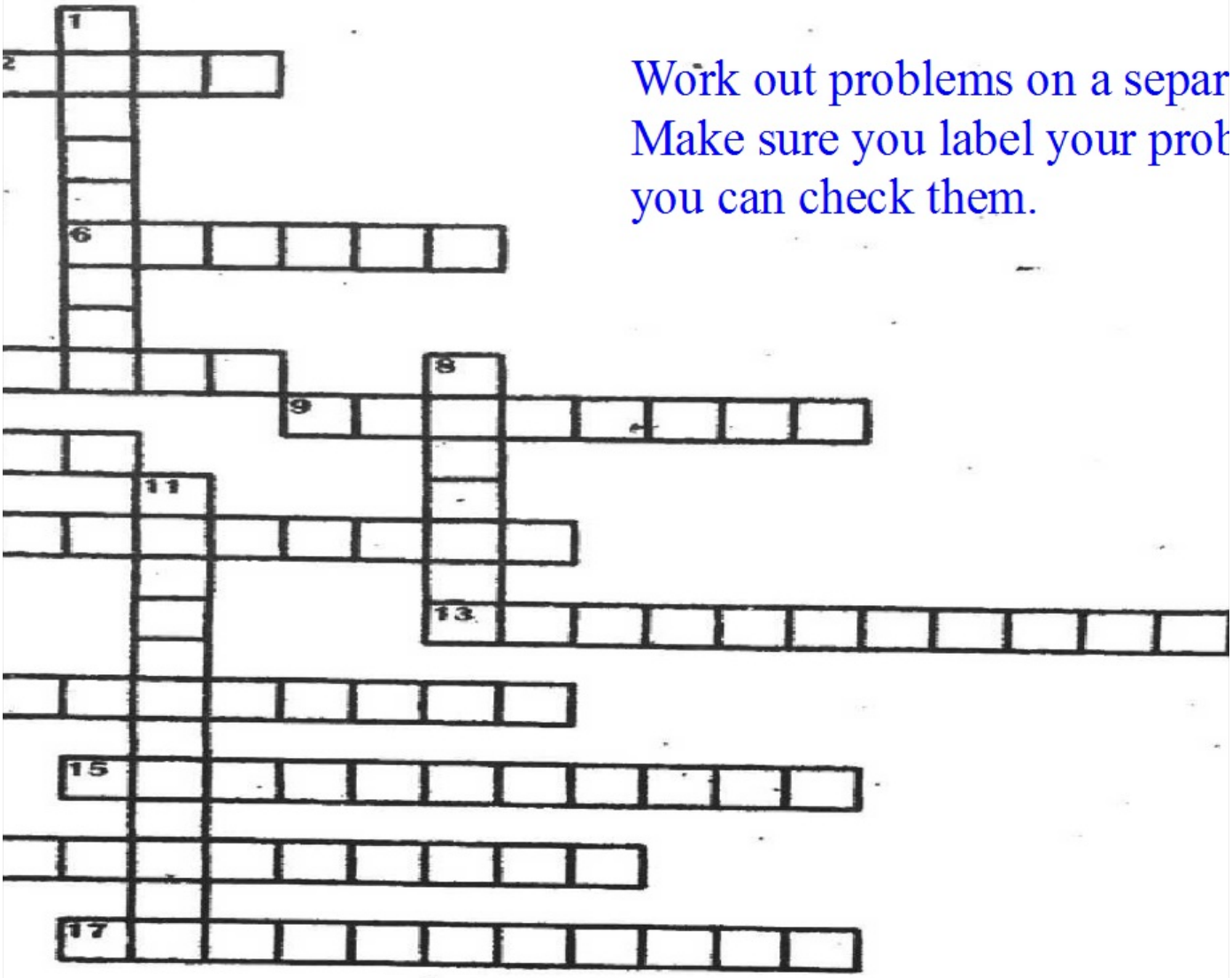
$$\frac{2}{3}[8(9) + 3(2)]$$

$$\frac{2}{3}[72 + 6]$$

$$\frac{2}{3}[78]$$

$$52$$

Date: _____



Work out problems on a separ
Make sure you label your prob
you can check them.

Down

1. $(-6)^2 - 19 =$
3. $-6 \cdot (-1) - 16 =$
5. $4^3 \div 2 + (-48) \div$
8. $(-2)^5 - (-12)(4) =$
11. $-[10 \cdot (-2) + (-2$

2) =

=

=

=

2 =

HW is below

Simplify the expression.

1. $90 + 9 \cdot 2$
2. $30 - 15 \div 5$
3. $4 \cdot 3 + \frac{35}{5}$
4. $64 \div 8 \cdot 2^2$
5. $7 + 2(15 - 6)$
6. $\frac{16 \cdot 3 - 4}{16 - 3 \cdot 4}$
7. $25 - (2 + 2) \cdot 3$
8. $7 \cdot 3^2 - 20 + 1$

Evaluate for the given values of the variables.

17. $8 + 3n$ for $n = 6$
18. $(8 + 3)n$ for $n = 6$
19. $90 - 4d$ for $d = 3$
20. $7x + 2y$ for $x = 15, y = 20$
21. $\frac{8b + 1}{7 - 2a}$ for $a = 2, b = 4$
22. $2 + 5x^2$ for $x = 4$
23. $2 + (5x)^2$ for $x = 4$
24. $(2 + 5x)^2$ for $x = 4$