

DAY 1

1st 5 No Calculator

- $3.2(4.1) = 13.12$
Handwritten: $\frac{4.1}{3.2} = \frac{41}{32}$
- $\frac{7}{28} \cdot \frac{4^1}{3} = \frac{7}{6} = 1\frac{1}{6}$
Handwritten: $\frac{4^1}{3}$
- $2 + \frac{5 \cdot 7}{35} - 4 = 2 + 35 - 4 = 37 - 4 = 33$
Handwritten: $\frac{5 \cdot 7}{35}$

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Unit 1 – Introduction to Algebra, Order of Operations, and Real Numbers

Algebra I Part I

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Exponents and Order of Operations

- An exponents tells how many times a number, the base, is used as a factor
- A power has 2 parts, a base and an exponent

*Handwritten: $2^4 = 2 \cdot 2 \cdot 2 \cdot 2$
2 is the base
4 is the exponent*

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Exponents and Order of Operations

- Order of Operations
 - > PEMDAS –
 - > Parentheses (grouping symbols) $()$; $[]$; $\{ \}$
 - > Exponents
 - > Multiplication/Division from left to right $6 \div 3 \times 2 = 2 \cdot 2 = 4$
 - > Addition/Subtraction in order from left to right $7 - 5 + 3 = 2 + 3$

Handwritten: $\frac{6-2}{5-3}$ makes $\frac{4}{2}$

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Exponents and Order of Operations

- Simplify

- $25 - 8 \cdot 2 + 3^2 =$
Handwritten: $25 - 8 \cdot 2 + 9 = 25 - 16 + 9 = 9 + 9 = 18$
- $6 - 10 \div 5 =$
Handwritten: $6 - 2 = 4$
- $4 \cdot 7 + 4 \div 2^2 =$
Handwritten: $4 \cdot 7 + 4 \div 4 = 28 + 1 = 29$

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Exponents and Order of Operations

- Evaluate

- $3a - 2^3 \div b$ where $a = 7$ and $b = 4$
Handwritten: $3(7) - 2^3 \div 4 = 21 - 2 = 19$
- $c^4 - d \cdot 2$ where $c = 2$ and $d = 5$
Handwritten: $2^4 - 5 \cdot 2 = 16 - 10 = 6$

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Exponents and Order of Operations

◎ Simplify

7. $15(13-7) \div (8-5)$
 $15(6) \div 3 = 90 \div 3 = 30$

8. $8 \div (9-7) + (13 \div 2)$
 $8 \div 2 + \frac{13}{2} = 4 + \frac{13}{2}$
 $= 4 + 6.5 = 10.5$

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Exponents and Order of Operations

◎ Evaluate each expression for $r = 9$ and $t = 14$

9. rt^2 $9(14)^2 = 9(196) = 1764$

10. r^2t $= 9^2 \cdot 14 = 81 \cdot 14 = 1134$

11. $(rt)^2 = (9 \cdot 14)^2 = (126)^2 = 15,876$

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12. $2[(13-7) \div 3]$
 $2[6 \div 3]$
 $2 \cdot 2 = 4$

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13. $5[4 + 3(2^2 + 1)]$
 $5[4 + 3(4 + 1)]$
 $5[4 + 3 \cdot 5]$
 $5[4 + 15]$
 $5 \cdot 19 = 95$

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14. $5 + [(2+1)^3 - 3]$
 $5 + [(3)^3 - 3]$
 $5 + [27 - 3]$
 $5 + 24$
 29

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15. $6 - 3[(8-7) * 2]$
 $6 - 3[1 \cdot 2]$
 $6 - 3 \cdot 2$
 $6 - 6$
 0

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Practice Work # 1
(PW 1)
⊙ Order of Operations
Worksheet

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