Bell Ringer

15

Thursday 1/16

1. You have a bag of marbles. There are 5 blue, 8 green and 2 orange. You choose 3 marbles one at a time without replacement. Find the following probabilities: Express answers as decimals.

P(blue, blue, blue) = $\frac{5}{15}\cdot\frac{4}{14}\cdot\frac{3}{13}=.022$ P(blue, green, orange) = $\frac{5}{15}\cdot\frac{8}{14}\cdot\frac{2}{13}=.029$ P(orange, green, orange) = $\frac{2}{15}\cdot\frac{8}{14}\cdot\frac{1}{13}=.0058$

2. You have a bag of marbles. There are 5 blue, 8 green and 2 orange. You choose 3 marbles one at a time with replacement. Find the following probabilities: Express answers as decimals.

P(blue, blue, blue) = $\frac{5}{15}\cdot\frac{5}{15}\cdot\frac{5}{15}=.037$ P(blue, green, orange) = $\frac{5}{15}\cdot\frac{8}{15}\cdot\frac{2}{15}=.023$ P(orange, green, orange) = $\frac{2}{15}\cdot\frac{8}{15}\cdot\frac{2}{15}=.0094$

3. You draw one card from a standard deck. Find the following probabilities: Express answers as decimals.

P(9) = $\frac{4}{52}=.08$ P(red) = $\frac{26}{52}=.5$ P(3 U red) = $\frac{4}{52}+\frac{26}{52}-\frac{2}{52}$ $\frac{28}{52}=.538$

P(black ∩ odd) = $\frac{10}{52}=.192$ P($\overline{Ace}$) = $\frac{48}{52}=.923$ P(heart ∩ black) = 0

Jan 8-11:26 AM

Standard 5A and 5B Retakes due Thurs 2/6

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REVIEW

Explain to your neighbor how to solve for x

$7x + 3 = 17$

$-3 \quad -3$

$\frac{7x}{7}=\frac{14}{7}$ $x=2$

Dec 12-2:58 PM

REVIEW

Explain to your neighbor how to solve for x

$14 = 3x - 5 + 6x$

$14 = 9x - 5$

$+5 \quad +5$

$\frac{19}{9}=\frac{9x}{9}$ $x = 2.\overline{11}$

Dec 12-2:58 PM

Pass out Ch 6 Reasons for Proofs

Algebraic Properties

- **Addition Property of equality**: if a = b, then a + c = b + c
- **Subtraction Property of equality**: if a = b, then a - c = b - c
- **Multiplication Property of equality**: if a = b, then ac = bc
- **Division Property of equality**: if a = b, then a/c = b/c
- **Distributive Property**: $a(b+c)=ab+ac$

Properties used for both Equality and Congruence

- **Reflexive Property**: a = a
- **Symmetric Property**: if a = b, then b = a
- **Transitive Property**: if a = b and b = c, then a = c
- **Substitution Property**: if a = b, then you can replace b with a or a with b in any expression

**Simplifying like terms (do the math)

$b=6$ $x=5$ $5=x$

Jan 9-3:22 PM

Which property justifies the step?

$4x + 5 = 11$

$-5 \quad -5$

$4x = 6$

Subtraction P.

Dec 13-8:29 AM

Which property justifies the step?

$7x = 21$

$\div 7 \quad \div 7$

$x = 3$

Division P.

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Which property justifies the step?

$2 \cdot \frac{x}{2} = -3 \cdot 2$

$x = -6$

Mult. P.

Dec 13-8:29 AM

Which property justifies the step?

$-2(3x + 1) = 7$

$-6x - 2 = 7$

Distribute P.

Dec 13-8:29 AM

Which property justifies the step?

$5 = x$

$x = 5$

Symmetric P.

Dec 13-8:29 AM

Which property justifies the step?

$5x - 2x = 24$

$3x = 24$

Substitution P.

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Which property justifies the step?

$-5 + 3x = 10$

$+5 \quad +5$

$3x = 15$

Dec 13-8:29 AM

Which property justifies the step?

$2 + 7x - 5 = 4x - 2x$

$7x - 3 = 2x$

Substitution P.

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do #s 2, 4, 6, 8 as part of lesson.

work with partner, on own etc...

Jan 9-3:25 PM

2.

Given: $\frac{4x+6}{2} = 9$
Prove: $x = 3$
Proof:

Statements	Reasons
a. $\frac{4x+6}{2} = 9$	a. Given
b. $2\left(\frac{4x+6}{2}\right) = 2(9)$	b. Mult. Prop.
c. $4x + 6 = 18$	c. Subst. P.
d. $4x + 6 - 6 = 18 - 6$	d. Subtraction P.
e. $4x =$ ____	e. Substitution
f. $\frac{4x}{4} =$ ____	f. Div. Prop.
g. ____	g. Substitution

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4. Given: $3x + 6 = 7x - 2$
Prove: $x = 2$

Statements	Reasons
1. $3x + 6 = 7x - 2$	1. Given
2. $6 = 4x - 2$	2. Subtraction Prop
3. $8 = 4x$	3. Addition Prop
4. $2 = x$	4. Division Prop
5. $x = 2$	5. Symmetric Prop

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6. Given: $\frac{1}{4}x + 7y = 10 - y$
Prove: $x = 40 - 32y$

Statements	Reasons
1. $\frac{1}{4}x + 7y = 10 - y$	1. Given
2. $\frac{1}{4}x + 7y - 7y = 10 - y - 7y$	2. Subtraction P.
3. $\frac{1}{4}x = 10 - 8y$	3. Substitution P.
4. $4\left(\frac{1}{4}x\right) = 4(10 - 8y)$	4. Multiplication P.
5. $x = 40 - 32y$	5. Distributive P.
6. $x = 40 - 32y$	6. Substitution P.

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8. Given: $4 - 7x = 2x - 23$
Prove: $x = 3$

Statements	Reasons
1. $4 - 7x = 2x - 23$	1. Given
2. $4 = 9x - 23$	2. Addition P.
3. $27 = 9x$	3. Addition P.
4. $3 = x$	4. Division P.
5. $x = 3$	5. Symmetric P.

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due Monday

Name: _____ **Hour:** _____ **Algebraic Proofs ws**

1-3. Fill in the blanks to complete each proof.

1. **Given:** $8x - 5 = 2x + 1$
Prove: $x = 1$
Proof:

Statements	Reasons
a. $8x - 5 = 2x + 1$	a. _____
b. $8x - 5 - 2x = 2x + 1 - 2x$	b. _____
c. _____	c. Substitution Property
d. _____	d. Addition Property
e. $6x = 6$	e. _____
f. $\frac{6x}{6} = \frac{6}{6}$	f. _____
g. _____	g. _____

2.

Given: $\frac{4x+6}{2} = 9$
Prove: $x = 3$
Proof:

Statements	Reasons
a. $\frac{4x+6}{2} = 9$	a. _____
b. $\left(\frac{4x+6}{2}\right) = 2(9)$	b. Mult. Prop.
c. $4x + 6 = 18$	c. _____
d. $4x + 6 - 6 = 18 - 6$	d. _____
e. $4x =$ _____	e. Substitution
f. $\frac{4x}{4} =$ _____	f. Div. Prop.
g. _____	g. Substitution

3.

Given: $4x + 8 = x + 2$
Prove: $x = -2$
Proof:

Statements	Reasons
a. $4x + 8 = x + 2$	a. _____
b. $4x + 8 - x = x + 2 - x$	b. _____
c. $3x + 8 = 2$	c. Substitution
d. _____	d. Subtr. Prop.
e. _____	e. Substitution
f. $\frac{3x}{3} = \frac{-6}{3}$	f. _____
g. _____	g. Substitution

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4-7. Give the reason for each statement in the following two-column proof.

4. Given: $3x + 6 = 7x - 2$
Prove: $x = 2$

Statements	Reasons
1. $3x + 6 = 7x - 2$	1. _____
2. $6 = 4x - 2$	2. _____
3. $8 = 4x$	3. _____
4. $2 = x$	4. _____
5. $x = 2$	5. _____

5. Given: $2 - 6x + 4 = 3x - 14 + x$
Prove: $x = 2$

Statements	Reasons
1. $2 - 6x + 4 = 3x - 14 + x$	1. _____
2. $6 - 6x = 3x - 14 + x$	2. _____
3. $6 - 6x = 4x - 14$	3. _____
4. $6 = 10x - 14$	4. _____
5. $20 = 10x$	5. _____
6. $2 = x$	6. _____
7. $x = 2$	7. _____

6. Given: $\frac{1}{4}x + 7y = 10 - y$
Prove: $x = 40 - 32y$

Statements	Reasons
1. $\frac{1}{4}x + 7y = 10 - y$	1. _____
2. $\frac{1}{4}x + 7y - 7y = 10 - y - 7y$	2. _____
3. $\frac{1}{4}x = 10 - 8y$	3. _____
4. $4\left(\frac{1}{4}x\right) = 4(10 - 8y)$	4. _____
5. $x = 4(10 - 8y)$	5. _____
6. $x = 40 - 32y$	6. _____

7. Given: $5(n-3) = 4(2n-7) - 14$
Prove: $n = 9$

Statements	Reasons
1. $5(n-3) = 4(2n-7) - 14$	1. _____
2. $5n - 15 = 8n - 28 - 14$	2. _____
3. $5n - 15 = 8n - 42$	3. _____
4. $5n - 15 + 15 = 8n - 42 + 15$	4. _____
5. $5n = 8n - 27$	5. _____
6. $5n - 8n = 8n - 27 - 8n$	6. _____
7. $-3n = -27$	7. _____
8. $\frac{-3n}{-3} = \frac{-27}{-3}$	8. _____
9. $n=9$	9. _____

8-10. Complete each proof

8. Given: $4 - 7x = 2x - 23$
Prove: $x = 3$

Statements	Reasons

9. Given: $\frac{1}{2}x + 6y = 8 - 3y$
Prove: $x = 16 - 18y$

Statements	Reasons

10. Given: $-(n-5) = 2(3n-8) - 7$
Prove: $n = 4$

Statements	Reasons