

# Daily Math

## Week 25 (2013-2014)

Tuesday February 18, 2014

Wednesday February 19, 2014

Thursday February 20, 2014

Friday February 21, 2014

Tuesday, February 18, 2014

1<sup>st</sup>

Solve for  $x$ :

$$(6x + 9) - (2x - 5) = 38$$

Tuesday, February 18, 2014

1<sup>st</sup>

Solve for  $x$ :

$$(6x + 9) - (2x - 5) = 38$$

Answer:

$$(6x + 9) - (2x - 5) = 38$$

$$6x + 9 - 2x + 5 = 38$$

$$4x + 14 = 38$$

$$4x + 14 - 14 = 38 - 14$$

$$4x = 24$$

$$4x \div 4 = 24 \div 4$$

$$x = 6$$

Tuesday, February 18, 2014

2<sup>nd</sup>

Expand:  $8m^2(3m^5 - 2m^4)$

Tuesday, February 18, 2014

2<sup>nd</sup>

Expand:

$$8m^2(3m^5 - 2m^4)$$

Answer:  $8m^2(3m^5 - 2m^4)$

$$24m^7 - 16m^6$$

Tuesday, February 18, 2014 3<sup>rd</sup>

Find the greatest common factor:

$$5a^2 + 2a$$

Tuesday, February 18, 2014 3<sup>rd</sup>

Find the greatest common factor:

$$5a^2 + 2a$$

Answer:  $5a^2 = 5 \cdot a \cdot a$

$$2a = 2 \cdot a$$

$$\text{GCF} = a$$

Tuesday, February 18, 2014

4<sup>th</sup>

Expand and simplify:

$$(x + 2)(x + 2)$$



Tuesday, February 18, 2014

4<sup>th</sup>

Expand and simplify:

$$(x + 2)(x + 2)$$

Answer:  $(x + 2)(x + 2)$

$$x(x + 2) + 2(x + 2)$$

$$x^2 + 2x + 2x + 4$$

$$**x^2 + 4x + 4**$$

Tuesday, February 18, 2014 5<sup>th</sup>

Find two integers whose product is -20 and whose sum is -1.

Tuesday, February 18, 2014

5<sup>th</sup>

Find two integers whose product is -20 and whose sum is -1.

Answer:

Factor 1	Factor 2	Sum
1	-20	$1 + -20 = -19$
2	-10	$2 + -10 = -8$
<b>4</b>	<b>-5</b>	<b><math>4 + -5 = -1</math></b>
5	-4	$5 + -4 = 1$
10	-2	$10 + -2 = 8$
20	-1	$20 + -1 = 19$

Tuesday, February 18, 2014

6<sup>th</sup>

If  $x = 60$ ,  $y = 5$ , and  $z = 2$ , then  $\sqrt{\frac{x}{2zy}} = ?$

Tuesday, February 18, 2014

6<sup>th</sup>

If  $x = 60$ ,  $y = 5$ , and  $z = 2$ , then  $\sqrt{\frac{x}{2zy}} = ?$

Answer:  $\sqrt{\frac{x}{2zy}}$

$$\sqrt{\frac{60}{2(2)(5)}} = \sqrt{\frac{60}{20}} = \sqrt{3}$$

Tuesday, February 18, 2014 7<sup>th</sup>

Find the polynomial for the perimeter of a triangle whose sides are  $(x^2 + 3x + 2)$ ,  $(2x^2 - 5x - 3)$ , and  $(x^2 + 8x + 15)$ .

Tuesday, February 18, 2014 7<sup>th</sup>

Find the polynomial for the perimeter of a triangle whose sides are  $(x^2 + 3x + 2)$ ,  $(2x^2 - 5x - 3)$ , and  $(x^2 + 8x + 15)$ .

Answer:

Perimeter = Sum of the sides

$$\begin{aligned} &(x^2 + 3x + 2) + (2x^2 - 5x - 3) + (x^2 + 8x + 15) \\ &(x^2 + 2x^2 + x^2) + (3x - 5x + 8x) + (2 - 3 + 15) \\ &\quad \mathbf{4x^2 + 6x + 14} \end{aligned}$$

Wednesday, February 19, 2014 1<sup>st</sup>

Expand:

$$7x^2y(3x^2y + 2xy^2 + x^3)$$



Wednesday, February 19, 2014 1<sup>st</sup>

Expand:

$$7x^2y(3x^2y + 2xy^2 + x^3)$$

Answer:

$$7x^2y(3x^2y + 2xy^2 + x^3)$$

$$21x^4y^2 + 14x^3y^3 + 7x^5y$$

Wednesday, February 19, 2014 2<sup>nd</sup>

Find the greatest common factor:

$$5x^2y + xy + 7xy^2$$

Wednesday, February 19, 2014 2<sup>nd</sup>

Find the greatest common factor:

$$5x^2y + xy + 7xy^2$$

Answer:

$$5x^2y = 5 \cdot x \cdot x \cdot y$$

$$xy = x \cdot y$$

$$7xy^2 = 7 \cdot x \cdot y \cdot y$$

$$\text{GCF} = xy$$

Wednesday, February 19, 2014 3<sup>rd</sup>

Expand and simplify:

$$(y - 3)(y - 3)$$

Wednesday, February 19, 2014 3<sup>rd</sup>

Expand and simplify:

$$(y - 3)(y - 3)$$

Answer:  $(y - 3)(y - 3)$

$$y(y - 3) - 3(y - 3)$$
$$y^2 - 3y - 3y + 9$$

$$y^2 - 6y + 9$$

Wednesday, February 19, 2014 4<sup>th</sup>

Find two integers whose product is -24 and whose sum is 5.

# Wednesday, February 19, 2014 4<sup>th</sup>

Find two integers whose product is -24 and whose sum is 5.

Answer:

Factor 1	Factor 2	Sum
1	-24	$1 + -24 = -23$
2	-12	$2 + -12 = -10$
3	-8	$3 + -8 = -5$
4	-6	$4 + -6 = -2$
6	-4	$6 + -4 = 2$
<b>8</b>	<b>-3</b>	<b><math>8 + -3 = 5</math></b>
12	-2	$12 + -2 = -10$
24	-1	$24 + -1 = 23$

Wednesday, February 19, 2014 5<sup>th</sup>

If  $x = 125$ ,  $y = 5$ , and  $z = 2$ , then

$$z(\sqrt{x} + \sqrt{y}) = ?$$



Wednesday, February 19, 2014 5<sup>th</sup>

If  $x = 125$ ,  $y = 5$ , and  $z = 2$ , then

$$z(\sqrt{x} + \sqrt{y}) = ?$$

Answer:  $2(\sqrt{125} + \sqrt{5})$

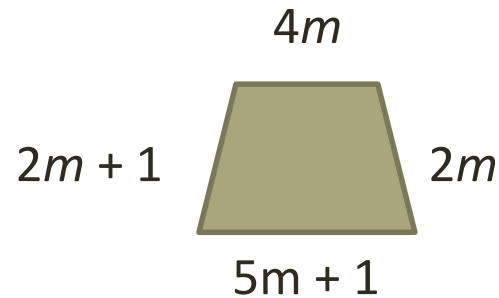
$$2(\sqrt{25}\sqrt{5} + \sqrt{5})$$

$$2(5\sqrt{5} + \sqrt{5})$$

$$2(6\sqrt{5}) = 12\sqrt{5}$$

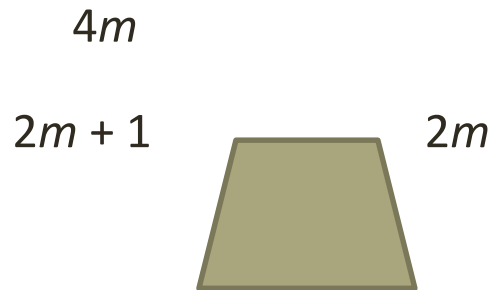
Wednesday, February 19, 2014 6<sup>th</sup>

Find the value of  $m$  if the perimeter of the trapezoid is 67.



# Wednesday, February 19, 2014 6<sup>th</sup>

Find the value of  $m$  if the perimeter of the trapezoid is 67.



Answer:

$$4m + 2m + (5m + 1) + (2m + 1) = 67$$

$$13m + 2 = 67$$

$$13m + 2 - 2 = 67 - 2$$

$$13m = 65$$

$$13m \div 13 = 65 \div 13$$

$$m = 5$$

Wednesday, February 19, 2014 7<sup>th</sup>

Expand:

$$30a(2a + b - 3c)$$

Wednesday, February 19, 2014 7<sup>th</sup>

Expand:

$$30a(2a + b - 3c)$$

Answer:  $30a(2a + b - 3c)$

$$**60a + 30b - 90c**$$

Thursday, February 20, 2014

1<sup>st</sup>

Factor:

$$x^2y^2 + x^3y$$

Thursday, February 20, 2014 1<sup>st</sup>

Factor:

$$x^2y^2 + x^3y$$

Answer:  $x^2y^2 = x \cdot x \cdot y \cdot y$

$$x^3y = x \cdot x \cdot x \cdot y$$

$$x \cdot x \cdot y(y + x)$$

$$x^2y(y + x)$$

Thursday, February 20, 2014 **2nd**

Expand and simplify:  $(m + 8)^2$



Thursday, February 20, 2014 2nd

Expand and simplify:  $(m + 8)^2$

Answer:  $(m + 8)^2 = (m + 8)(m + 8)$

$m(m + 8) + 8(m + 8)$

$m^2 + 8m + 8m + 64$

**$m^2 + 16m + 64$**

Thursday, February 20, 2014 **3rd**

Find two integers whose product is  $-60$   
and whose sum is  $-11$ .

# Thursday, February 20, 2014 3rd

Find two integers whose product is -60 and whose sum is -11.

Answer:

Factor 1	Factor 2	Sum
1	-60	$1 + -60 = -59$
2	-30	$2 + -30 = -28$
3	-20	$3 + -20 = -17$
<b>4</b>	<b>-15</b>	<b><math>4 + -15 = -11</math></b>
5	-12	$5 + -12 = -7$
6	-10	$6 + -10 = -4$
10	-6	$10 + -6 = 4$
12	-5	$12 + -5 = 7$
15	-4	$15 + -4 = 11$
20	-3	$20 + -3 = -17$
30	-2	$30 + -2 = -28$
60	-1	$60 + -1 = -59$

Thursday, February 20, 2014 4th

$3\sqrt{5}$  is between which two integers?

Thursday, February 20, 2014 4th

$3\sqrt{5}$  is between which two integers?

Answer:  $3\sqrt{5} = \sqrt{9}\sqrt{5} = \sqrt{45}$

$$\sqrt{36} < \sqrt{45} < \sqrt{49}$$

$$6 < \sqrt{45} < 7$$

Thursday, February 20, 2014 5<sup>th</sup>

Simplify:

$$\frac{12x^5y^7z^3}{15x^7y^3z^3}$$

Thursday, February 20, 2014

5<sup>th</sup>

Simplify:

$$\frac{12x^5y^7z^3}{15x^7y^3z^3}$$

Answer:  $\frac{12x^5y^7z^3}{15x^7y^3z^3}$

$$\frac{12y^4}{15x^2} = \frac{3 \cdot 4 \cdot y^4}{3 \cdot 5 \cdot x^2} = \frac{4y^4}{5x^2}$$

Thursday, February 20, 2014

6<sup>th</sup>

Expand:

$$6x^2(7x^2 - 5x - 6)$$



Thursday, February 20, 2014

6<sup>th</sup>

Expand:

$$6x^2(7x^2 - 5x - 6)$$

Answer:  $6x^2(7x^2 - 5x - 6)$

$$42x^4 - 30x^3 - 36x^2$$

Thursday, February 20, 2014

7<sup>th</sup>

Factor:

$$5a^5 + 3a^4 + 6a^3$$

Thursday, February 20, 2014

7<sup>th</sup>

Factor:

$$5a^5 + 3a^4 + 6a^3$$

$$\text{Answer: } 5a^5 = 5 \cdot a \cdot a \cdot a \cdot a \cdot a$$

$$3a^4 = 3 \cdot a \cdot a \cdot a \cdot a$$

$$6a^3 = 3 \cdot 2 \cdot a \cdot a \cdot a$$

$$a \cdot a \cdot a (5 \cdot a \cdot a + 3 \cdot a + 3 \cdot 2)$$

$$a^3 (5a^2 + 3a + 6)$$

Friday, February 21, 2014

**1st**

Expand and simplify:

$$(n - 5)^2$$

Friday, February 21, 2014

1st

Expand and simplify:

$$(n - 5)^2$$

Answer:  $(n - 5)^2 = (n - 5)(n - 5)$

$$n(n - 5) - 5(n - 5)$$

$$n^2 - 5n - 5n + 25$$

$$**n^2 - 10n + 25**$$

Friday, February 21, 2014      **2nd**

Find two integers whose product is -180 and whose sum is 11.

# Friday, February 21, 2014

# 2nd

Find two integers whose product is -180 and whose sum is 11.

Answer:

Factor 1	Factor 2	Sum	Factor 1	Factor 2	Sum
1	-180	$1 + -180 = -179$	15	-12	$15 + -12 = 3$
2	-90	$2 + -90 = -88$	18	-10	$18 + -10 = 8$
3	-60	$3 + -60 = -57$	<b>20</b>	<b>-9</b>	<b><math>20 + -9 = 11</math></b>
4	-45	$4 + -45 = -41$	30	-6	$30 + -6 = 24$
5	-36	$5 + -36 = -31$	36	-5	$36 + -5 = 31$
6	-30	$6 + -30 = -24$	45	-4	$45 + -4 = 41$
9	-20	$9 + -20 = -11$	60	-3	$60 + -3 = 57$
10	-18	$10 + -18 = -8$	90	-2	$90 + -2 = 88$
12	-15	$12 + -15 = -3$	180	-1	$180 + -1 = 179$

Friday, February 21, 2014

**3rd**

Evaluate  $3x^2 - 2x + 10$ , if  $x = \frac{2}{3}$



Friday, February 21, 2014

3rd

Evaluate  $3x^2 - 2x + 10$ , if  $x = \frac{2}{3}$

Answer:  $3x^2 - 2x + 10$

$$3 \left( \frac{2}{3} \right)^2 - 2 \left( \frac{2}{3} \right) + 10$$

$$3 \left( \frac{4}{9} \right) - 2 \left( \frac{2}{3} \right) + 10$$

$$\frac{12}{9} - \frac{4}{3} + 10$$

$$\frac{12}{9} - \frac{12}{9} + 10 = \mathbf{10}$$

Friday, February 21, 2014

4th

Find the greatest common factor:

$$-14x^3y^3 + 8x^5y + 20x^5$$

Friday, February 21, 2014

4th

Find the greatest common factor:

$$-14x^3y^3 + 8x^5y + 20x^5$$

Answer:

$$-14x^3y^3 = -1 \cdot 2 \cdot 7 \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y$$

$$8x^5y = 2 \cdot 2 \cdot 2 \cdot x \cdot x \cdot x \cdot x \cdot x \cdot y$$

$$20x^5 = 2 \cdot 2 \cdot 5 \cdot x \cdot x \cdot x \cdot x \cdot x$$

$$\text{GCF} = 2x^3$$

Friday, February 21, 2014

5th

Expand and simplify:

$$(x + 10)(x - 10)$$

Friday, February 21, 2014

5th

Expand and simplify:

$$(x + 10)(x - 10)$$

Answer:

$$x(x - 10) + 10(x - 10)$$

$$x^2 - 10x + 10x - 100$$

$$**x^2 - 100**$$

Friday, February 21, 2014

6th

Find two integers that multiply to -16  
and add to 0.

Friday, February 21, 2014

6th

Find two integers that multiply to -16 and add to 0.

Answer:

Factor 1	Factor 2	Sum
1	-16	$1 + -16 = -15$
2	-8	$2 + -8 = -6$
4	-4	$4 + -4 = 0$
8	-2	$8 + -2 = 6$
16	-1	$16 + -1 = 15$

Friday, February 21, 2014

7th

Solve for  $d$ :

$$3(3d + 5) - 4(2d - 3) = 11$$



Friday, February 21, 2014

7th

Solve for  $d$ :

$$3(3d + 5) - 4(2d - 3) = 11$$

Answer:

$$3(3d + 5) - 4(2d - 3) = 11$$

$$9d + 15 - 8d + 12 = 11$$

$$d + 27 = 11$$

$$d + 27 - 27 = 11 - 27$$

$$**d = -16**$$