Mrs. Urban 2013

Algebra 2 - Final Exam Review (answers only)

① $y = (x+5)^2 - 33$ ② $(x+3)$ and $(x-2)$ ③ $y = 3(x+4)(x-4)$

④ 2 and $-\frac{6}{5}$ ⑤ $\left(-\frac{11}{10}, -\frac{81}{20}\right)$ ⑥ $(2,-1)$

⑦ $\{4, -6\}$ ⑧ at $(0,9)$ ⑨ 2 and -5

⑩ $\{3, -5\}$ ⑪ $(2,13)$

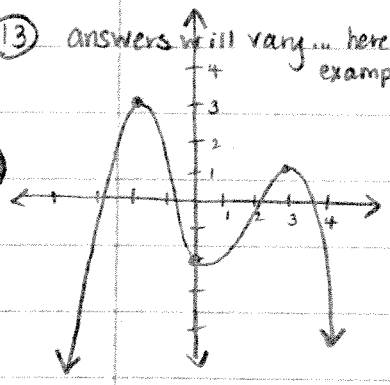
⑫ answers will vary on this question... here is one example, be sure to provide your own.

$$\sum_{i=1}^{\infty} -14\left(-\frac{1}{3}\right)^{i-1}$$

because $|r| < 1$, this will have a sum

$S_\infty = -10\frac{1}{2}$

⑬ answers will vary... here is one example.



Increasing: $-\infty < x < -2$ or $0 < x < 3$

Decreasing: $3 < x < \infty$ or $-2 < x < 0$

⑭ $(5x+6)(25x^2 - 30x + 36)$

⑮ $(x-2)(x+1)(2x+1)$ ⑯ $\frac{1}{3}$ and -2 ⑰ $(x-5)(x+4)(x-4)$

⑱ $3\sqrt[4]{2}$ ⑲ $hop = \frac{8}{-3x-4}$

$D: \mathbb{R}, x \neq -4/3$

⑳ $3xy^2z^3\sqrt[3]{2z}$

㉑ $x^2 + 2x - 2 + \frac{3}{x-2}$ ㉒ 11 ㉓ $x^2 + 7x - 8$

(24) 210

(25) $xy = 18$

(26) $\frac{z}{xy} = 9$

(27) $\frac{zx}{y} = 8$

(28) a)

(29) H.A.: $y = 5$

V.A.: $x = 3$

(30) c)

(31) $\frac{(x+2)}{(x-3)}$

(32) $\frac{1}{(x-2)}$

(33) $(x+8)$

(34) $\frac{5x-8}{3x(x-2)}$

(35) $\frac{20}{(x+7)}$

(36) $x = 15$

(37) $\{-6, 8\}$

(38) 14

(39) 162

(40) c) $d = 3$

(41) c) $r = \frac{1}{2}$

(42) $\frac{8}{y^5}$

(43) answers will vary, here is one example.

$12x^3 + 3x^2 - 2$

(44) $x^2 + 3x - 2 + \frac{-12}{x-2}$

(45) yes, from A)

$(x+1)$

(46) yes, from A)

-1 is a root

(47) 0

(48) -12

(49) $64x^{33}y^{24}z^3$

(50) $56x^5 - 40x^4 - 7x + 5$

(51) $-11x^2 + 3x + 6$

(52) $\frac{9}{7}x^2 + 5x + \frac{7}{3}$

(53) $\{-6, 2, 7\}$

(54) D

(55) as $x \to +\infty$, $f(x) \to -\infty$

as $x \to -\infty$, $f(x) \to +\infty$

4 turning points

min. degree of 5

No absolute max or min

relative min: $(0, -3)$

relative max: $(2, 6)$

(56) roots: $\{-2, -1, 1\}$

factors: $(x+2)(x+1)(x-1)$

$y = x^3 + 2x^2 - x - 2$

(57) 1 and 2

(58) a. $(4x+1)(4x-1)$

b. $(y-7)(y+2)$

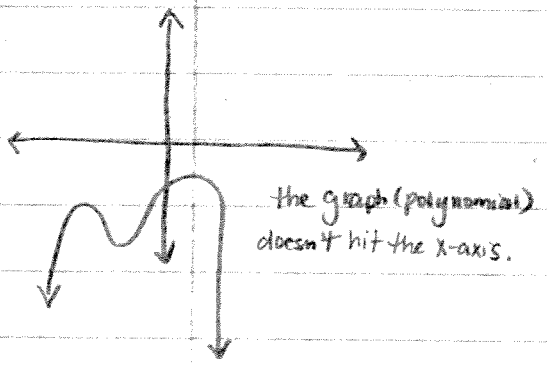
c. $-4(r-2)$

d. $(5x-1)(x-2)$

e. prime

f. $2(a+1)(a-3)$

(59) pictures will vary, but reasoning should be the same.



the graph (polynomial) doesn't hit the x-axis.

(60) a. $(2x-1)(3x-2)$

b. $f(x) = 6x^2 - 7x + 2$

(61) $\{(3, 2), (-2, -3)\}$

(62) $\{6 \pm 2\sqrt{5}\}$

(63) $\{3, -\frac{5}{3}\}$

(64) -3

(65) a. 14.75

b. 5.15

c. 15, 10, 15, 18, 11, 12, 13

58.3%

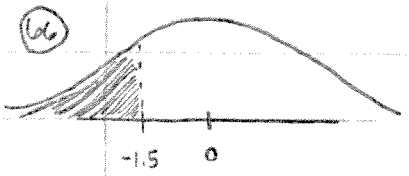
d. 68%

how far each data piece sits from the mean in terms of a standard deviations.

e. 11: $-.73$

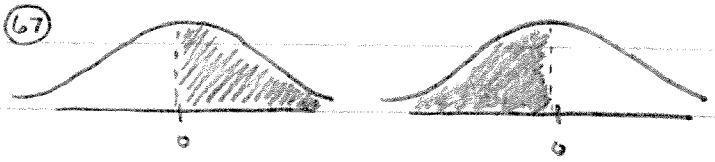
26: 2.18

(66)



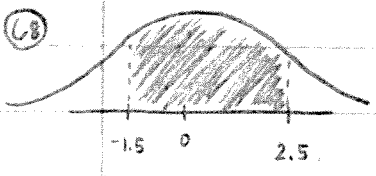
6.68%.

(67)



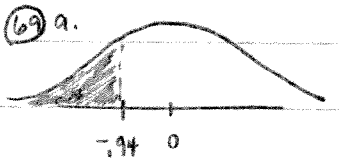
both represent 50% of the data set present.

(68)



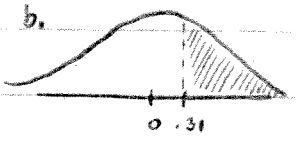
92.7%.

(69) a.



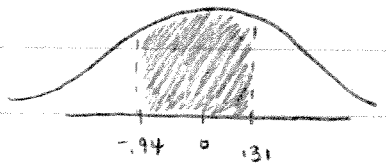
.1736

b.



.3783

c.



.4481

(70) a. 720
b. 144
c. 36
d. 48

(71) 24

(72) 720

(73) a. 1001
b. 120
c. 48

(74) $\sin\theta = \frac{\sqrt{13}}{7}$ $\csc\theta = \frac{7\sqrt{13}}{13}$

$\cos\theta = \frac{6}{7}$ $\sec\theta = \frac{7}{6}$

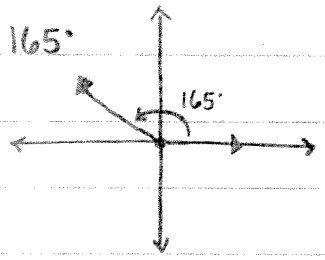
$\tan\theta = \frac{\sqrt{13}}{6}$ $\cot\theta = \frac{6\sqrt{13}}{13}$

(75) 66.4°

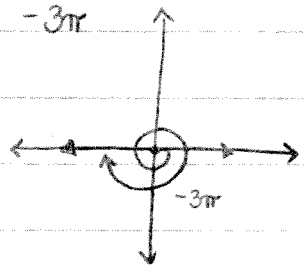
(76) 2.8

(77) $\measuredangle A = 56°$
$b = 4.5$
$a = 6.6$

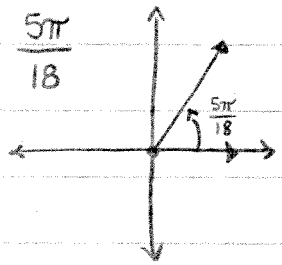
(78) a. 165°



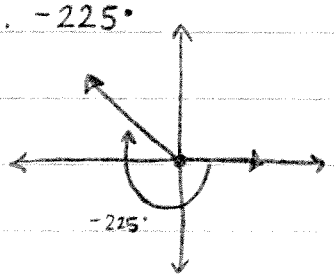
b. -3π



c. $\frac{5\pi}{18}$



d. $-225°$



(79) Tower height:
433 ft

friend distance:
445 ft