HW 7.1

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#6) $(a-b)^2 = 289$ $(a+b)^2 = 169$

$|4ab| = ?$ ① $a^2 - 2ab + b^2 = 289$ ② $a^2 + 2ab + b^2 = 169$

$-(a^2 + 2ab + b^2 = 169)$

$-4ab = 120$

$4ab = -120$

$|4ab| = |-120|$

$= 120$

#7) $-3x + 4y - 8 = 0$ $Ax + By + C = 0$ (1, 5) (m, n)

$$D = \frac{|Am + Bn + C|}{\sqrt{A^2 + B^2}}$$

#1r) $\sqrt{(-2a^3b)^2}$ $\sqrt{x^2} = |x|$

$\sqrt{(-2a^3b)(-2a^3b)}$ $\sqrt{(-2a^3b)^2} = |-2a^3b|$

$\sqrt{4a^6b^2}$ $= |2a^3b|$

$= 2a^3b$

1. a) 22 b) 11 c) 60

d) 21 e) -29 f) -8

g) 13 h) -47 i) -30

j) -6 k) 21 L) -153

m) $\frac{4}{5}$ n) $\frac{13}{3}$ o) 2

p) 15 q) 223 r) $2a^3b$

2. i) $|-12| = 12$ ii) $-|-3 \times 4| = -12$ iii) $|-8-3| = 11$ iv) $|2|2-7|| = 10$ v) $-|8-2|^2 = 36$

(v) < (ii) < (iv) < (iii) < (i)

3. $|a-b| + |b-a| = |(b-1)+b| + |b-(b-1)|$

$= |-(-1)| + |-1|$

$= 1 + 1$

$= 2$

4. $\sqrt{a^2} = 13$

$a^2 = 169$

$a = \pm 13$

5. a) $|a+b| = -5$

Incorrect, Abs, Cannot be negative.

b) $-|2a| = 6$

Incorrect, Abs, Cannot be negative.

c) $\sqrt{(2a)^2} = |2a|$

Correct

d) $|a-b| = |b-a|$

Correct.

6. $(a-b)^2 = 289$ $(a+b)^2 = 169$ $2a = |a+b| + |a-b| = 30$

$a - b = \pm 17$ $a + b = \pm 13$

$|a-b| = 17$ $|a+b| = 13$

$2b = |a+b| - |a-b| = -4$

$2a \cdot 2b = 4ab = 30 \cdot -4 = -120$

$|4ab| = |-120| = 120$

7. $D = \frac{|-3 \cdot (+1) + 4(5) - 8|}{\sqrt{(-3)^2 + (4)^2}} = \frac{|-3 + 20 + (-8)|}{\sqrt{9+16}}$

$= \frac{9}{5}$

$= \left| \frac{4}{5} \right|$